STIC Search Report
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TO: Jezia Riley **Location: 2a31 / 2c18** **Thursday, May 26, 2005** **Art Unit: 1637** **Phone: 571-272-0786** **Serial Number: 10 / 056917**	**From: Jan Delaval** **Location: Biotech-Chem Library** **Remsen 1a51** **Phone: 571-272-2504** **jan.delaval@uspto.gov**

Search Notes

Search and Information Resources Administration

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Patent and Trademark Office

SEARCH REQUEST FORM

Examiner # (Mandatory): 73411 Requester's Full Name: Jezia Riley

Art Unit 1637 Location (Bldg/Room#): Rem 2A31 Mail Box 2C18 Phone (~~circle 305 306 308~~) 20786

Serial Number: 10/056,917 Results Format Preferred (circle): PAPER DISK E-MAIL

Title of Invention _____

Inventors (please provide full names): _____

Earliest Priority Date: _____

Keywords (include any known synonyms registry numbers, explanation of initialisms):

Please do a structure search (see attached claims)

Thank you

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Search Topic:
Please write detailed statement of the search topic, and the concept of the invention. Describe as specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples of relevant citations, authors, etc., if known. You may include a copy of the abstract and the broadcast or most relevant claim(s).

C. Chan
Rush

STAFF USE ONLY

Searcher: _____
Searcher Phone #: 22504
Searcher Location: _____
Date Picked Up: 5/26/05
Date Completed: 5/26/05
Clerical Prep Time: _____
Terminal Time: 160
Number of Databases: 7 9440

Type of Search
_____ N.A. Sequence
_____ A.A. Sequence
✓ Structure (#)
_____ Bibliographic
_____ Litigation1
_____ Fulltext
_____ Procurement
_____ Other

Vendors (include cost where applicable)
✓ STN
_____ Questel/Orbit
_____ Lexis/Nexis
_____ WWW/Internet
_____ In-house sequence systems (list)
_____ Dialog
_____ Dr. Link
_____ Westlaw
_____ Other (specify)

PTO-1590 (2-99)

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=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 09:43:58 ON 26 MAY 2005
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)
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FILE COVERS 1907 - 26 May 2005  VOL 142 ISS 22
FILE LAST UPDATED: 25 May 2005  (20050525/ED)

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

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     (FILE 'HOME' ENTERED AT 08:11:39 ON 26 MAY 2005)
               SET COST OFF

     FILE 'HCAPLUS' ENTERED AT 08:12:10 ON 26 MAY 2005
L1             2 S (US20030039992 OR US20050042627)/PN OR (US2002-056917# OR US2
                 E CHAKRABARTI R/AU
L2           106 S E3-E7,E10,E11
                 E SCHUTT C/AU
L3            87 S E3,E4,E9,E10
                 E PRINCETON/PA,CS
L4         43072 S E1-E4 OR PRINCETON?/PA,CS
                 E NUCLEIC ACID AMPLIFICATION/CT
L5          7787 S E4-E6
                 E E4+ALL
L6         63001 S E2+NT
                 E AMPLFICATION/CT
                 E AMPLIFICATION/CT
                 E E3+ALL
L7           187 S E2
L8          4440 S E4
                 E E6+ALL
                 E E1+ALL
L9             7 S L1-L3 AND L5-L8
L10       193440 S PCR OR POLYMERASE?(L)CHAIN?(L)REACTION?
L11            7 S L1-L3 AND L10
L12            8 S L9,L11
L13            5 S L1-L3 AND ?AMPLIF?
L14            1 S L1-L3 AND ?REPLICAT?
L15            8 S L1,L9,L11-L14
L16           81 S L4 AND L5-L8,L10
L17          632 S L4 AND (?AMPLIF? OR ?REPLICAT?)
L18           35 S L16 AND L17
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L19           5 S L15 AND L16-L18
L20           8 S L15,L19
L21         180 S L1-L3 NOT L20
              SEL RN L20

     FILE 'REGISTRY' ENTERED AT 08:23:34 ON 26 MAY 2005
L22          62 S E1-E62
L23           7 S 1600-44-8 OR 126-33-0 OR 70769-71-0 OR 4253-91-2 OR 67-71-0 O
L24           2 S 9012-90-2 OR 9068-38-6
                E TAQ/CN
                E TTH/CN
                E TME/CN
                E TLI/CN
                E PFU/CN
                E DNA POLYMERASE/CN
                E DNA POLYMERASE I/CN
L25           1 S E3
                E KLENOW/CN
                E POLYMERASE
L26        9647 S E3,E4
                E NUCLEOTIDYLTRANSFERASE
L27        9512 S E2-E4 (L) DEOXYRIBONUCLEATE
L28        5039 S L26 (L) DNA
L29       13816 S L24,L25,L27,L28
L30        4558 S L26 NOT L29

     FILE 'HCAPLUS' ENTERED AT 08:29:52 ON 26 MAY 2005
L31       49695 S L29
L32       28550 S L30
L33       76638 S L31,L32
L34      264176 S L10,L33
L35       67121 S L5-L8
L36       55524 S L34 AND L35
L37        5733 S L23
L38         151 S TETRAMETHYLENESULFONE OR TETRAMETHYLENESULPHONE OR TETRAMETHY
L39         922 S (TETRAMETHYLENE OR TETRA METHYLENE)()(SULFONE OR SULPHONE OR
L40           0 S TETRA()(METHYLENESULFONE OR METHYLENESULPHONE OR METHYLENESUL
L41        1675 S METHYLSULFONE OR METHYLSULPHONE OR METHYL()(SULFONE OR SULPHO
L42         466 S ETHYLSULFONE OR ETHYLSULPHONE OR ETHYL()(SULFONE OR SULPHONE)
L43         154 S PROPYLSULFONE OR PROPYLSULPHONE OR PROPYL()(SULFONE OR SULPHO
L44         150 S PROPYLSULFOXIDE OR PROPYLSULPHOXIDE OR PROPYL()(SULFOXIDE OR
L45           1 S METHYL ()(S OR SEC)()BUTYL ()(SULFOXIDE OR SULPHOXIDE)
L46         130 S METHYLSULFONYLMETHANE OR METHYLSULPHONYLMETHANE OR METHYL()(S
L47          62 S (METHYLSULFONYL OR METHYLSULPHONYL)()METHANE
L48          83 S TETRAHYDROTHIOPHENEDIOXIDE OR TETRAHYDROTHIOPHENE DIOXIDE OR
L49         156 S DIETHYLSULFONE OR DIETHYLSULPHONE OR (DIETHYL OR DI ETHYL OR
L50          35 S DIPROPYLSULFONE OR DIPROPYLSULPHONE OR (DIPROPYL OR DI PROPYL
L51        1006 S DIMETHYLSULFONE OR DIMETHYLSULPHONE OR (DIMETHYL OR DI METHYL
L52        4759 S SULFOLAN# OR SULPHOLAN#
L53          91 S DIPROPYLSULFOXIDE OR DIPROPYLSULPHOXIDE OR (DIPROPYL OR DI PR
L54         313 S (TETRAHYDROTHIOPHENE OR TETRA HYDROTHIOPHENE OR TETRAHYDRO TH
L55          61 S THIOLANE 1 1 DIOXIDE
L56           6 S THIOLANE S OXIDE
L57       10151 S L37-L56
L58          17 S L57 AND L34
L59           5 S L57 AND L35
L60          17 S L58,L59
L61      295086 S L34 OR DNASE OR DNA POLYMERASE OR ?POLYMERASE?
L62          19 S L61 AND L57
L63          19 S L60,L62
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                SEL DN AN 1 5 6 8 10-16
L64           11 S L63 AND E1-E31
L65           15 S L2,L3 AND L61
L66            3 S L2,L3 AND L57
L67            7 S L2,L3 AND L35
L68           16 S L20,L65-L67
                SEL DN AN 5 8 10-16
L69            7 S L68 NOT E32-E58
L70           15 S L64,L69
L71           15 S L70 AND L1-L21,L31-L70

     FILE 'REGISTRY' ENTERED AT 08:56:09 ON 26 MAY 2005
L72            7 S L22 AND L23
L73            2 S L22 AND L24-L30
L74           53 S L22 NOT L72,L73
L75           37 S L74 NOT SQL/FA
L76            5 S L75 AND S/ELS
L77           17 S L75 AND N/ELS
L78           15 S L77 NOT OC4/ES
                SEL RN 6 9 12 13 15
L79           12 S L77 NOT E59-E63
L80            5 S L78 NOT L79
L81           10 S L78 AND L79
L82           15 S L76,L81
L83           15 S L75 NOT L76-L82

     FILE 'HCAPLUS' ENTERED AT 09:04:36 ON 26 MAY 2005
                SET SMARTSELECT ON
L84          SEL L21 1- RN :      302 TERMS
                SET SMARTSELECT OFF

     FILE 'REGISTRY' ENTERED AT 09:04:42 ON 26 MAY 2005
L85          302 S L84
L86            0 S L85 AND L23
L87            1 S L85 AND L24-L30
L88          299 S L85 NOT L22
L89          297 S L88 NOT SQL/FA
L90           49 S L89 AND S/ELS
L91           88 S L89 AND N/ELS NOT L90
L92            1 S L91 AND C6H11NO

     FILE 'HCAPLUS' ENTERED AT 09:07:58 ON 26 MAY 2005

     FILE 'REGISTRY' ENTERED AT 09:16:25 ON 26 MAY 2005

     FILE 'HCAPLUS' ENTERED AT 09:19:39 ON 26 MAY 2005
L93          166 S L92
L94            0 S L93 AND L61
L95            0 S L93 AND L35

     FILE 'REGISTRY' ENTERED AT 09:20:33 ON 26 MAY 2005

     FILE 'HCAPLUS' ENTERED AT 09:20:56 ON 26 MAY 2005
L96        76684 S L82
L97          390 S L96 AND L61
L98          154 S L97 AND L35
L99            3 S L97 AND L1-L3
L100          15 S L71,L99
L101         151 S L98 NOT L100
L102          61 S L101 AND (BIOCHEM?(L)METHOD?)/SC,SX
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L103        134 S L101 AND (BIOCHEM?(L)GENETIC?)/SC,SX
L104        146 S L102,L103
L105          5 S L101 NOT L104
L106         91 S L104 AND P/DT
L107         55 S L104 NOT L106
L108         41 S L107 AND PY<=2001
L109          0 S L108 AND ?NUCELOTIDE?
                E POLYNUCLEOTIDE/CT
L110          0 S L108 AND E8-E10
L111          1 S L108 AND E8+OLD,NT,PFT,RT
                E NUCLEIC ACIDS/CT
L112         27 S L108 AND E3+OLD,NT,PFT,RT
L113          0 S L108 AND E11-E16
L114         26 S L112 AND (DMSO OR DIMETHYL SULFOXIDE)
L115          1 S L112 NOT L114

     FILE 'REGISTRY' ENTERED AT 09:27:08 ON 26 MAY 2005
L116         14 S L82 NOT C2H6OS

     FILE 'HCAPLUS' ENTERED AT 09:27:41 ON 26 MAY 2005
L117      55790 S L116
L118         92 S L117 AND L61
L119         30 S L118 AND L35
L120          3 S L119 AND L71
L121         27 S L119 NOT L120
L122         64 S L118 AND P/DT
L123         28 S L118 NOT L122
L124         25 S L123 AND PY<=2001
                SEL DN AN 4 12 16 21
L125          4 S L124 AND E1-E12
L126         48 S L122 AND (PD<=20010130 OR PRD<=20010130 OR AD<=20010130)
                SEL DN AN 5 8 9 11 12 15 19 22 25 26 28 31 32 35 38 42 44
L127         17 S L126 AND E13-E63
L128         34 S L71,L120,L125,L127
L129         34 S L128 AND L1-L21,L31-L71,L93-L115,L117-L128
                SEL HIT RN

     FILE 'REGISTRY' ENTERED AT 09:37:30 ON 26 MAY 2005
L130         30 S E64-E93
L131          8 S L130 AND L24-L30
L132         22 S L130 NOT L131
L133         20 S L132 NOT (C2H6OS OR C2H6O2S)
L134          2 S L132 NOT L133

     FILE 'HCAPLUS' ENTERED AT 09:39:26 ON 26 MAY 2005
L135         25 S L133 AND L129
L136          9 S L129 NOT L135
L137          3 S L136 AND L1-L3
L138         28 S L135,L137
L139          6 S L136 NOT L138
                SEL DN AN 2
L140          1 S E94-E96 AND L139
L141         29 S L138,L140

     FILE 'HCAPLUS' ENTERED AT 09:43:58 ON 26 MAY 2005

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L141 ANSWER 1 OF 29  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2005:160723  HCAPLUS
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DN 142:255737
ED Entered STN: 25 Feb 2005
TI Methods for polynucleotide **amplification** at low temperature
IN **Chakrabarti, Raj; Schutt, Clarence**
PA USA
SO U.S. Pat. Appl. Publ., 35 pp., Cont.-in-part of U.S. Ser. No. 56,917.
CODEN: USXXCO
DT Patent
LA English
IC ICM C12Q001-68
ICS C12P019-34
INCL 435006000; 435091200
CC 3-1 (Biochemical Genetics)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	US 2005042627	A1	20050224	US 2004-792404	20040303	<--
	US 2003039992	A1	20030227	US 2002-56917	20020125	<--
PRAI	US 2002-56917	A2	20020125	<--		
	US 2003-451642P	P	20030304			
	US 2003-451650P	P	20030304			
	US 2001-264935P	P	20010130	<--		
	US 2001-298166P	P	20010614	<--		
	US 2001-298250P	P	20010614	<--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
US 2005042627	ICM	C12Q001-68	
	ICS	C12P019-34	
	INCL	435006000; 435091200	
US 2005042627	NCL	435/006.000; 435/091.200	<--
US 2003039992	NCL	435/006.000	<--

AB The invention relates to a composition and method for performing a polynucleotide **amplification** reaction at low temperature, including a polynucleotide **amplification** reaction mixture into which is incorporated a sufficiently high concentration of a low mol. weight compound selected from the group consisting of amides, sulfones, sulfoxides and diols, to accomplish the **amplification** at the low temperature The invention also relates to a composition and method for enhancing a polynucleotide **amplification** reaction, including a polynucleotide **amplification** reaction mixture into which is incorporated a low mol. weight diol in an amount effective to enhance the polynucleotide **amplification.**
ST polynucleotide **amplification** low temp
IT **Nucleic acid amplification (method)**
(low temperature; methods for polynucleotide **amplification** at low temperature)
IT Buffers
(methods for polynucleotide **amplification** at low temperature)
IT Amides, reactions
Glycols, reactions
Sulfones
Sulfoxides
RL: RGT (Reagent); RACT (Reactant or reagent)
(methods for polynucleotide **amplification** at low temperature)
IT 57-55-6, 1,2-Propanediol, reactions 107-21-1, Ethylene glycol, reactions 107-41-5, 2-Methyl-2,4-pentanediol 107-88-0, 1,3-Butanediol 110-63-4, 1,4-Butanediol, reactions 111-29-5, 1,5-Pentanediol 504-63-2, 1,3-Propanediol 584-03-2, 1,2-Butanediol 625-69-4, 2,4-Pentanediol

629-11-8, 1,6-Hexanediol 5057-98-7, cis-1,2-Cyclopentanediol
5057-99-8, trans-1,2-Cyclopentanediol 5343-92-0, 1,2-Pentanediol
6920-22-5, 1,2-Hexanediol 29348-79-6, Pentanediol
RL: RGT (Reagent); RACT (Reactant or reagent)
(methods for polynucleotide **amplification** at low temperature)
IT 845839-88-5 845839-89-6 845839-90-9 845839-91-0 845839-92-1
845839-93-2 845839-94-3 845839-95-4
RL: PRP (Properties)
(unclaimed nucleotide sequence; methods for polynucleotide **amplification** at low temperature)

L141 ANSWER 2 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2004:713934** HCAPLUS
DN **141:375224**
ED Entered STN: 01 Sep 2004
TI Characterization of the synthetic compatible solute homoectoine as a potent **PCR** enhancer
AU Schnoor, Michael; Voss, Peter; Cullen, Paul; Boeking, Thomas; Galla, Hans-Joachim; Galinski, Erwin A.; Lorkowski, Stefan
CS Institute of Arteriosclerosis Research, Institute of Biochemistry, University of Muenster, Germany
SO Biochemical and Biophysical Research Communications (2004), 322(3), 867-872
CODEN: BBRCA9; ISSN: 0006-291X
PB Elsevier
DT Journal
LA English
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 9
AB Different substances such as DMSO, **tetramethylene sulfoxide**, 2-pyrollidone, and the naturally occurring compatible solute betaine enhance **PCR** amplification of GC-rich DNA templates with high melting temps. In particular, cyclic compatible solutes outperform traditional **PCR** enhancers. The authors therefore investigated the effects that cyclic naturally occurring ectoine-type compatible solutes and their synthetic derivs. have on melting temperature of double-stranded DNA (dsDNA) and on **PCR** amplification of different templates. L-Ectoine, betaine, and derivs. of L-ectoine decreased, whereas β-hydroxyectoine increased, the melting temperature of dsDNA. The ability to decrease the melting temperature was greatest for homoectoine, a new synthetic derivative of L-ectoine. Furthermore, compatible solutes, especially homoectoine, enhanced **PCR** amplification of GC-rich DNA (72.6% GC content; effective range: 0.1-0.5 M).
ST solute homoectoine **PCR** enhancer; DNA melting ectoine homoectoine hydroxyectoine betaine
IT DNA
RL: PRP (Properties)
(double-stranded, ectoine-type compatible solutes effect on melting temperature of dsDNA; synthetic compatible solute homoectoine as potent **PCR** enhancer)
IT **PCR (polymerase chain reaction)**
(synthetic compatible solute homoectoine as potent **PCR** enhancer)
IT 107-43-7, Betaine 96702-03-3 165542-15-4, β-Hydroxyectoine
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(ectoine-type compatible solutes effect on melting temperature of dsDNA; synthetic compatible solute homoectoine as potent **PCR** enhancer)
IT 783339-87-7, Homoectoine

RL: ARU (Analytical role, unclassified); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(synthetic compatible solute homoectoine as potent **PCR** enhancer)

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L141 ANSWER 3 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:22200 HCAPLUS
DN 140:177503
ED Entered STN: 12 Jan 2004
TI Novel **PCR**-enhancing compounds and their modes of action
AU **Chakrabarti, Raj**
CS Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, USA
SO PCR Technology (2nd Edition) (2004), 51-63. Editor(s): Weissensteiner, Thomas; Griffin, Hugh G.; Griffin, Annette. Publisher: CRC Press LLC, Boca Raton, Fla.
CODEN: 69EYN6; ISBN: 0-8493-1184-5
DT Conference
LA English
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 3
AB A wide variety of novel **polymerase chain reaction** (**PCR**)-enhancing cosolvents, which together constitute a library of chems. for **PCR** optimization, were identified and characterized. In many cases, it has been possible to qual. correlate the yield and effective concentration range of these compds. with their impact on the **reaction.**
ST **polymerase chain reaction** cosolvent
IT Solvents

(cosolvents; novel **PCR**-enhancing compds. and their modes of action)
IT DNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(melting; novel **PCR**-enhancing compds. and their modes of action)
IT **PCR (polymerase chain reaction)**
(novel **PCR**-enhancing compds. and their modes of action)
IT Solvents
(organic; novel **PCR**-enhancing compds. and their modes of action)
IT **9012-90-2**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Taq; novel **PCR**-enhancing compds. and their modes of action)
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Blake, R; Nucleic Acids Res 1996, V24, P2095 HCAPLUS
(2) Breslauer, K; Methods in Molecular Biology: Protocols for Oligonucleotide Conjugates 1994, V26 HCAPLUS
(3) Chakrabarti, R; BioTechniques 2002, V32 HCAPLUS
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(5) Chakrabarti, R; Nucleic Acids Res 2001, V29, P2377 HCAPLUS
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IT **9012-90-2**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Taq; novel **PCR**-enhancing compds. and their modes of action)
RN 9012-90-2 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L141 ANSWER 4 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2002:907069** HCAPLUS
DN **138:1959**
ED Entered STN: 29 Nov 2002

TI Compositions, methods, and kits for isolating nucleic acids using surfactants and proteases
IN Greenfield, Lawrence; Montesclaros, Luz
PA Applera Corp., USA
SO U.S. Pat. Appl. Publ., 57 pp., Cont.-in-part of U.S. Ser. No. 724,613.
CODEN: USXXCO
DT **Patent**
LA English
IC ICM C12Q001-68
ICS C12N001-08
INCL 435006000; 435270000
CC 9-9 (Biochemical Methods)
Section cross-reference(s): 3
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	US 2002177139	A1	20021128	US 2001-997169	20011128	<--
	US 6762027	B2	20040713			
	US 2005009045	A1	20050113	US 2004-800137	20040311	<--
PRAI	US 2000-724613	A2	20001128	<--		
	US 2001-997169	A1	20011128			

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
US 2002177139	ICM	C12Q001-68	
	ICS	C12N001-08	
	INCL	435006000; 435270000	
US 2002177139	NCL	435/006.000; 435/243.000; 536/023.100; 536/026.420; 536/027.120	
	ECLA	C12N015/10A2	<--
US 2005009045	NCL	435/006.000; 435/270.000	
	ECLA	C12N015/10A2	<--

AB The invention relates to compns. and methods for isolating nucleic acids from biol. samples, including whole tissue. The invention also provides kits for isolating nucleic acids from biol. samples. A method for obtaining nucleic acid from a biol. sample and binding the nucleic acid to a solid phase comprises (a) contacting the biol. sample with a disrupting buffer, wherein the disrupting buffer comprises a protease and a cationic surfactant; (b) substantially neutralizing the cationic surfactant; and (c) binding the nucleic acid to a solid phase. Genomic DNA was isolated from several rat tissues and mouse tail using a digestion solution containing 1 mg of Proteinase K, 1 % DTAB, 100 mM Tris-HCl (pH 8.0), 20 μM ATA, and 20 mM CaCl2 and incubating for 60 min at 65°. Most of the tissues were effectively digested in less than one hour. Digestion of liver, brain and kidney were about 95 % complete after one hour. Following digestion, binding solution containing 5 M GuSCN, 50 mM MES (pH 6.0), 20 mM EDTA, and 6 % Tween 20 was then added to each sample and the samples were placed on GF/B filter membranes for washing and recovery of DNA.

ST nucleic acid isolation surfactant protease; kit nucleic acid isolation surfactant protease; DNA tissue isolation proteinase K DTAB
IT Bentonite, uses
RL: NUU (Other use, unclassified); USES (Uses)
(RNase inhibitor, disrupting buffer containing; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Thermus
(Rt41A, thermostable protease of; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Bacillus licheniformis
Streptomyces griseus

(alkaline serine protease from; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Quaternary ammonium compounds, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(alkylbenzyldimethyl, chlorides, cationic surfactant, effect on proteinase K activity; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Quaternary ammonium compounds, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(alkyltrimethyl, bromides, cationic surfactant, effect on proteinase K activity; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Samples
(biol.; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Surfactants
(cationic; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Animal tissue
Biological materials
Liver
Plant tissue
Structure-activity relationship
Surfactants
(compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Salts, uses
RL: NUU (Other use, unclassified); USES (Uses)
(compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Nucleic acids
RL: PUR (Purification or recovery); PREP (Preparation)
(compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Buffers
(disrupting; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Cations
(divalent, chelator for, as **DNase** inhibitor; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Filters
(fiber, glass, DNA reversible binding to; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Glass fibers, reactions
RL: DEV (Device component use); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(filters or membranes, DNA reversible binding to; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Chelating agents
(for divalent cations, as **DNase** inhibitor; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Brain
Kidney
Lung
Muscle
Pancreas
(genomic DNA isolation from rat; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT Mus

(genomic DNA isolation from tail of; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT Tail, anatomical
(genomic DNA purification from rat; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT Rattus
(genomic DNA purification from tails of; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT DNA
RL: PUR (Purification or recovery); PREP (Preparation)
(genomic; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT Surfactants
(nonionic; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polyamines, nonpolymeric, RNase inhibitor, disrupting buffer containing; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT Intestine
(small, genomic DNA isolation from rat; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT Bacillus thermoproteolyticus rokko
(thermostable protease of; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT Kidney
Lung
(toxicity, genomic DNA isolation from rat; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT Liver
(toxicity; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT 64-69-7 75-12-7, Formamide, uses 90-45-9, 9-Aminoacridine 124-20-9, Spermidine 1074-12-0, Phenylglyoxal 1113-59-3 4431-00-9, Aurintricarboxylic acid 7440-50-8, Copper, uses 7440-62-2D, Vanadium, complexes with ribonucleotides 7440-66-6, Zinc, uses 7733-02-0, Zinc sulfate 24645-80-5, p-Hydroxyphenylglyoxal 165281-56-1
RL: NUU (Other use, unclassified); USES (Uses)
(RNase inhibitor, disrupting buffer containing; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT 60-00-4, EDTA, uses 67-42-5, EGTA 67-43-6, DTPA
RL: NUU (Other use, unclassified); USES (Uses)
(as divalent cation chelator for inhibiting **DNase**; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT 1185-53-1, Tris hydrochloride
RL: NUU (Other use, unclassified); USES (Uses)
(buffer containing; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

IT 122-18-9, Benzyldimethylhexadecylammonium chloride 122-19-0, Mackernium SDC-85 139-08-2, Benzyldimethyltetradecylammonium chloride 151-21-3, Sodium Dodecyl Sulfate, biological studies 3529-04-2, Benzyldimethylhexadecylammonium bromide 7281-04-1, Benzyldimethyldodecylammonium bromide 26062-79-3, Mackernium 006 26590-05-6, Mackernium 007 37139-99-4, Olealkonium chloride 475143-78-3, Mackernium WLE 475143-79-4, Quaternium 84
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cationic surfactant, effect on proteinase K activity; compns., methods, and kits for isolating nucleic acids using surfactants and

proteases)
IT 57-09-0, Cetyltrimethylammonium bromide 112-00-5, Dodecyltrimethylammonium chloride 112-02-7, Cetyltrimethylammonium chloride 1119-94-4, Dodecyltrimethylammonium bromide 1119-97-7, Tetradecyltrimethylammonium bromide 2082-84-0, Decyltrimethylammonium bromide 4574-04-3, Tetradecyltrimethylammonium chloride 15510-55-1, Dodecyltriphenylphosphonium bromide 68207-00-1, Dodecylethyldimethylammonium bromide
RL: NUU (Other use, unclassified); USES (Uses)
(cationic surfactant; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT 9014-01-1, Subtilisin 9073-78-3, Thermolysin 37259-58-8, Proteinase R 39450-01-6, Proteinase K 42613-33-2, Dispase 180984-02-5, Subtilase
RL: CAT (Catalyst use); USES (Uses)
(compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT 50-01-1, Guanidine hydrochloride 65-61-2, Acridine orange 137-16-6, Sarkosyl 540-72-7, Sodium thiocyanate 593-84-0, Guanidine thiocyanate 7447-41-8, Lithium chloride (LiCl), uses 7550-35-8, Lithium bromide (LiBr) 7647-15-6, Sodium bromide (NaBr), uses 7681-82-5, Sodium iodide (NaI), uses 10043-52-4, Calcium chloride, uses 10377-51-2, Lithium iodide (LiI) 145224-94-8
RL: NUU (Other use, unclassified); USES (Uses)
(compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT 7601-89-0, Sodium perchlorate 7681-11-0, Potassium iodide, uses 7789-17-5, Cesium iodide (CsI) 7790-29-6, Rubidium iodide (RbI)
RL: NUU (Other use, unclassified); USES (Uses)
(detergent solubility in relation to; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT 75-57-0, Tetramethylammonium chloride 127-09-3, Sodium acetate **872-50-4**, 1-Methyl-2-Pyrrolidinone, uses 1112-67-0, Tetrabutylammonium chloride 7647-14-5, Sodium chloride, uses 9005-79-2, Glycogen, uses 13595-73-8, 1-Hexanesulfonic acid 20283-21-0, 1-Decanesulfonic acid
RL: NUU (Other use, unclassified); USES (Uses)
(in solubilization of CTAB-nucleic acid precipitate; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT 9001-99-4, Ribonuclease
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor, disrupting buffer containing; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT **9003-98-9**, Deoxyribonuclease
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT 1338-39-2, Span 20 9002-92-0, Brij 30 9002-93-1, Triton X-100 9005-64-5, Tween 21 9005-65-6, Tween 80 9005-66-7, Tween 40 9005-67-8, Tween 60 9005-70-3, Tween 85 9036-19-5, IGEPAL CA-630
RL: NUU (Other use, unclassified); USES (Uses)
(nonionic surfactant; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
IT 9001-92-7, Protease
RL: CAT (Catalyst use); USES (Uses)
(protease; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; WO 9515970 1995 HCAPLUS
(2) Anon; WO 9804730 1998 HCAPLUS

(3) Anon; WO 9820164 1998 HCAPLUS
(4) Anon; EP 1018549 A1 2000 HCAPLUS
(5) Anon; DE 19937607 A1 2001 HCAPLUS
(6) Anon; US 0145071 2002
(7) Chapdelaine, P; BioTechniques 1993, V14(2), P163 HCAPLUS
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(9) Dattagupta; US 6242188 B1 2001 HCAPLUS
(10) Downs; US 4481294 A 1984 HCAPLUS
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(13) Goldenberger, D; PCR Methods and Applications 1995, V4, P368 HCAPLUS
(14) Lai, C; BioTechniques 1993, V15(4), P620 HCAPLUS
(15) Laird, P; Nucleic Acids Research 1991, V19(15), P4293 HCAPLUS
(16) Lienau; US 6548256 B2 2003 HCAPLUS
(17) Macfarlane; US 5010183 A 1991 HCAPLUS
(18) Macfarlane; US 5300635 A 1994 HCAPLUS
(19) Macfarlane; US 5728822 A 1998 HCAPLUS
(20) Macfarlane, D; Journal of Clinical Laboratory Analysis 1997, V11, P132 HCAPLUS
(21) Macfarlane, D; Nature 1993, V362, P186 MEDLINE
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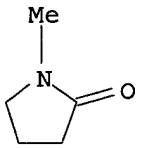
(23) Richards, E; Preparation of Genomic DNA from Plant Tissue in Current Protocols in Molecular Biology 1994, V1, P2.3.3
(24) Schneider; US 5596092 A 1997 HCAPLUS
(25) Seibert, G; Z. Naturforsch Sect. C. Biosci 1977, V32(3-4), P294
(26) Van Ness; US 5130423 A 1992 HCAPLUS
(27) Wiegers, U; Biochemical and Biophysical Research Communications 1971, V44(2), P513 HCAPLUS
(28) Wilson, K; Preparation of Genomic DNA from Bacteria" in Current Protocols in Molecular Biology 1994, V1, P2.4.1

IT **872-50-4**, 1-Methyl-2-Pyrrolidinone, uses
RL: NUU (Other use, unclassified); USES (Uses)
(in solubilization of CTAB-nucleic acid precipitate; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

RN 872-50-4 HCAPLUS
CN 2-Pyrrolidinone, 1-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT **9003-98-9**, Deoxyribonuclease
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor; compns., methods, and kits for isolating nucleic acids using surfactants and proteases)

RN 9003-98-9 HCAPLUS
CN Nuclease, deoxyribo- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L141 ANSWER 5 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:771094 HCAPLUS
DN 138:199342
ED Entered STN: 10 Oct 2002
TI **PCR** enhancement by organic solvents: progress toward the development of chemical **PCR**

AU **Chakrabarti, Raj**
CS **Princeton Univ., Princeton, NJ, USA**
SO (2002) 269 pp. Avail.: UMI, Order No. DA3039696
From: Diss. Abstr. Int., B 2002, 63(1), 236
DT Dissertation
LA English
CC 3-1 (Biochemical Genetics)
AB Unavailable
ST **PCR** org solvent
IT **PCR (polymerase chain reaction)**
(**PCR** enhancement by organic solvents)
IT Solvents
(organic; **PCR** enhancement by organic solvents)

L141 ANSWER 6 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2002:595132** HCAPLUS
DN **137:151980**
ED Entered STN: 09 Aug 2002
TI A label-free high-throughput optical technique for detecting biomolecular interactions
IN Cunningham, Brian T.; Pepper, Jane; Lin, Bo; Li, Peter; Pien, Homer
PA Sru Biosystems, LLC, USA
SO PCT Int. Appl., 150 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM G01N033-543
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 14
FAN.CNT 15

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002061429	A2	20020808	WO 2001-US45455	20011023 <--
	WO 2002061429	C1	20030515		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2002168295	A1	20021114	US 2001-929957	20010815 <--
	CA 2427689	AA	20020808	CA 2001-2427689	20011023 <--
	EP 1337847	A1	20030827	EP 2001-998024	20011023 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2004529324	T2	20040924	JP 2002-561944	20011023 <--
	US 2003210396	A1	20031113	US 2001-1069	20011030 <--
	US 6870624	B2	20050322		
	US 2004151626	A1	20040805	US 2004-399940	20040116
PRAI	US 2000-244312P	P	20001030 <--		
	US 2001-283314P	P	20010412		
	US 2001-303028P	P	20010703		
	US 2001-310399P	P	20010806		
	WO 2001-US45455	W	20011023		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES

WO 2002061429	ICM	G01N033-543	
WO 2002061429	ECLA	B01L003/00C2D; G01N021/25B2; G01N021/47H; G01N033/543K2; G02B005/18D	<--
US 2002168295	NCL	422/082.050	
	ECLA	G01N033/543K2	<--
JP 2004529324	FTERM	2G059/AA05; 2G059/BB12; 2G059/CC16; 2G059/DD12; 2G059/EE02; 2G059/EE12; 2G059/FF01; 2G059/GG01; 2G059/GG03; 2G059/HH01; 2G059/JJ05; 2G059/JJ11; 2G059/JJ15; 2G059/JJ17; 2G059/KK01; 2G059/MM01; 2G059/MM02; 2G059/MM03; 2G059/MM04; 2G059/MM05; 2G059/MM10	<--
US 2003210396	NCL	356/416.000; 356/440.000; 422/082.050	
	ECLA	G02B005/18D; G02B005/20M	<--
US 2004151626	NCL	422/058.000; 422/082.110	

AB Methods and compns. are provided for detecting biomol. interactions. The use of labels is not required and the methods can be performed in a high-throughput manner. The invention also provides optical devices useful as narrow band filters.

ST high throughput optical technique detecting biomol interaction

IT Antibodies and Immunoglobulins
RL: ANT (Analyte); ANST (Analytical study)
(IgG; label-free high-throughput optical technique for detecting biomol. interactions)

IT Immunoassay
(enzyme-linked immunosorbent assay; label-free high-throughput optical technique for detecting biomol. interactions)

IT Prostate gland
(fluid; label-free high-throughput optical technique for detecting biomol. interactions)

IT Amniotic fluid
Animal tissue
Ascitic fluid
Blood analysis
Blood plasma
Blood serum
Body fluid
Borrelia burgdorferi
Cell
Cerebrospinal fluid
Computer program
Diffraction gratings
Eubacteria
Feces
High throughput screening
Human
Immobilization, molecular or cellular
Interference
Laser radiation
Lenses
Lymph
Mathematical methods
Memory devices
Microarray technology
Molecular association
Molecular electronics
Nanoparticles
Neoplasm
Optical diffraction
Optical fibers
Photolithography

Photoresists
Physisorption
Polarization
Reaction kinetics
Refractive index
Saliva
Semen
Simulation and Modeling, physicochemical
Sputum
Statistical analysis
Surface structure
Synovial fluid
Tear (ocular fluid)
Virus
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Receptors
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Antibodies and Immunoglobulins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Antigens
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Nucleic acids
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Epoxy resins, uses
RL: DEV (Device component use); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Glass, uses
RL: DEV (Device component use); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Plastics, uses
RL: DEV (Device component use); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Proteins
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Lung
(lavage fluid; label-free high-throughput optical technique for detecting biomol. interactions)

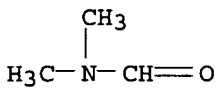
IT Optical disks
(memory devices; label-free high-throughput optical technique for detecting biomol. interactions)

IT Flow
(micro-; label-free high-throughput optical technique for detecting biomol. interactions)

IT Biosensors
(optical; label-free high-throughput optical technique for detecting

biomol. interactions)
IT Vapor deposition process
(plasma enhanced chemical (PECVD); label-free high-throughput optical technique for detecting biomol. interactions)
IT Albumins, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(serum, bovine; label-free high-throughput optical technique for detecting biomol. interactions)
IT Coating process
(spin; label-free high-throughput optical technique for detecting biomol. interactions)
IT Lung
(toxicity, lavage fluid; label-free high-throughput optical technique for detecting biomol. interactions)
IT Interferons
RL: ANT (Analyte); ANST (Analytical study)
(γ; label-free high-throughput optical technique for detecting biomol. interactions)
IT 9013-20-1, Streptavidin **169592-56-7**, Caspase-3
RL: ANT (Analyte); ANST (Analytical study)
(label-free high-throughput optical technique for detecting biomol. interactions)
IT 6066-82-6D, N-Hydroxysuccinimide, reaction with peptides 444879-88-3D, reaction products with N-hydroxy succinimide
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(label-free high-throughput optical technique for detecting biomol. interactions)
IT 71-00-1, L-Histidine, analysis 36875-25-9, Dimethylpimelimidate 74124-79-1, N, N'-Disuccinimidyl carbonate 112241-19-7, SMPT
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(label-free high-throughput optical technique for detecting biomol. interactions)
IT 919-30-2, 3-Aminopropyltriethoxysilane 109940-19-4, Sulfo-succinimidyl-6-(biotinamido) hexanoate
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process)
(label-free high-throughput optical technique for detecting biomol. interactions)
IT 1314-61-0, Tantalum oxide 1314-98-3, Zinc sulfide, uses 7429-90-5, Aluminum, uses 12033-89-5, Silicon nitride, uses 13463-67-7, Titanium dioxide, uses
RL: DEV (Device component use); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)
IT 67-56-1, Methanol, uses 67-63-0, Isopropyl alcohol, uses 67-64-1, Acetone, uses **68-12-2**, Dimethyl formamide, uses 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)
IT **169592-56-7**, Caspase-3
RL: ANT (Analyte); ANST (Analytical study)
(label-free high-throughput optical technique for detecting biomol. interactions)
RN 169592-56-7 HCAPLUS
CN Apopain (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **68-12-2**, Dimethyl formamide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)
RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



DMF

L141 ANSWER 7 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2002:595057** HCAPLUS
DN **137:151087**
ED Entered STN: 09 Aug 2002
TI Low molecular weight additives increasing the yield, accuracy, and sensitivity of nucleic acid **amplification** methods
IN **Chakrabarti, Raj; Schutt, Clarence E.**
PA The Trustees of **Princeton** University, USA
SO PCT Int. Appl., 64 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM C12Q001-68
CC 3-1 (Biochemical Genetics)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002061137	A2	20020808	WO 2002-US2068	20020125 <--
	WO 2002061137	A3	20030724		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI	US 2001-264935P	P	20010130 <--
	US 2001-298166P	P	20010614 <--
	US 2001-298250P	P	20010614 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002061137	ICM	C12Q001-68

OS MARPAT 137:151087
AB Compns. and methods for enhancing **PCR** and other polynucleotide **replication** reactions are disclosed. These comprise the addition of low mol. weight organic amides, sulfones or sulfoxides to **PCR** or other **replication** reaction mixts. The additives are particularly useful in dealing with high-(GC) DNA sequences. Expts. screening for effective additives and optimizing concns. and incubation conditions are described. The effects are characterized in terms of potency: the greatest improvement in signal strength regardless of the concentration; and specificity:

the effect on background **amplification.**

ST amide sulfone sulfoxide nucleic acid **amplification; PCR** amide sulfone sulfoxide additive

IT **Nucleic acid amplification (method)**
(LCR (ligase chain reaction); low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

IT Amides, uses
Lactams
Sulfones
Sulfoxides
RL: MOA (Modifier or additive use); USES (Uses)
(as additives for nucleic acid **amplification** reactions; low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

IT **Nucleic acid amplification (method)**
(ligase **amplification** reaction; low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

IT **NASBA (nucleic acid sequence-based amplification)**
Nucleic acid amplification (method)
PCR (polymerase chain reaction)
Test kits
(low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

IT **Nucleic acid amplification (method)**
(self-sustained sequence **amplification**; low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

IT Sulfonamides
RL: MOA (Modifier or additive use); USES (Uses)
(sultams, as additives for nucleic acid **amplification** reactions; low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

IT **Nucleic acid amplification (method)**
(transcription-based; low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

IT 60-35-5, Acetamide, uses **67-68-5**, DMSO, uses **67-71-0**, **Dimethyl sulfone 68-12-2**, N,N-Dimethylformamide, uses 75-12-7, Formamide, uses **77-79-2**, Sulfolene 79-05-0, Propionamide **79-16-3**, N-Methylacetamide **105-60-2**, ε-Caprolactam, uses 107-43-7, Betaine **123-39-7**, N-Methylformamide **126-33-0**, **Tetramethylene sulfone 127-19-5**, N,N-Dimethylacetamide 563-83-7, Isobutyramide **597-35-3**, **Ethyl sulfone 598-03-8**, **Propyl sulfone 616-45-5**, 2-Pyrrolidone **675-20-7**, δ-Valerolactam **872-50-4**, N-Methylpyrrolidone, uses **1003-78-7**, 2,4-Dimethylsulfolane **1600-44-8**, **Tetramethylene sulfoxide 2168-93-6**, Butyl sulfoxide **3445-11-2 4253-91-2**, **Propyl sulfoxide 4394-85-8**, N-Formyl morpholine **70769-71-0**, **Methyl sec-butyl sulfoxide**
RL: MOA (Modifier or additive use); USES (Uses)
(as additive for nucleic acid **amplification** reactions; low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

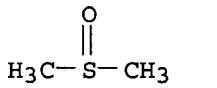
IT **9012-90-2**, **DNA polymerase 9068-38-6**,

Reverse transcriptase
RL: CAT (Catalyst use); USES (Uses)
(improving activity and specificity of; low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

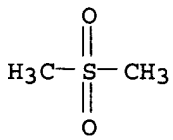
IT 445371-21-1 445371-22-2 445371-23-3 445371-24-4 445371-25-5
445371-26-6 445371-27-7 445371-28-8
RL: PRP (Properties)
(unclaimed nucleotide sequence; low mol. weight additives increasing the yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

IT **67-68-5**, DMSO, uses **67-71-0**, **Dimethyl sulfone 68-12-2**, N,N-Dimethylformamide, uses **77-79-2**, Sulfolene **79-16-3**, N-Methylacetamide **105-60-2**, ε-Caprolactam, uses **123-39-7**, N-Methylformamide **126-33-0**, **Tetramethylene sulfone 127-19-5**, N,N-Dimethylacetamide **597-35-3**, **Ethyl sulfone 598-03-8**, **Propyl sulfone 616-45-5**, 2-Pyrrolidone **675-20-7**, δ-Valerolactam **872-50-4**, N-Methylpyrrolidone, uses **1003-78-7**, 2,4-Dimethylsulfolane **1600-44-8**, **Tetramethylene sulfoxide 2168-93-6**, Butyl sulfoxide **3445-11-2 4253-91-2**, **Propyl sulfoxide 4394-85-8**, N-Formyl morpholine **70769-71-0**, **Methyl sec-butyl sulfoxide**
RL: MOA (Modifier or additive use); USES (Uses)
(as additive for nucleic acid **amplification** reactions; low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)

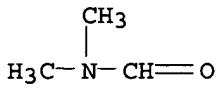
RN 67-68-5 HCAPLUS
CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)



RN 67-71-0 HCAPLUS
CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)

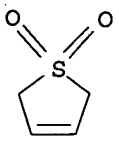


RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)

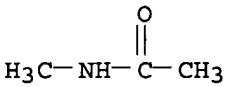


RN 77-79-2 HCAPLUS

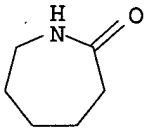
CN Thiophene, 2,5-dihydro-, 1,1-dioxide (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



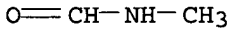
RN 79-16-3 HCAPLUS
CN Acetamide, N-methyl- (8CI, 9CI) (CA INDEX NAME)



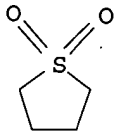
RN 105-60-2 HCAPLUS
CN 2H-Azepin-2-one, hexahydro- (8CI, 9CI) (CA INDEX NAME)



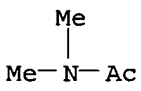
RN 123-39-7 HCAPLUS
CN Formamide, N-methyl- (8CI, 9CI) (CA INDEX NAME)



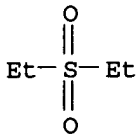
RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



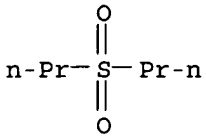
RN 127-19-5 HCAPLUS
CN Acetamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



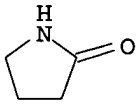
RN 597-35-3 HCAPLUS
CN Ethane, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



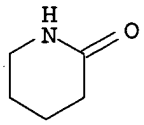
RN 598-03-8 HCAPLUS
CN Propane, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



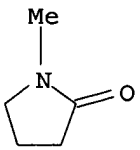
RN 616-45-5 HCAPLUS
CN 2-Pyrrolidinone (8CI, 9CI) (CA INDEX NAME)



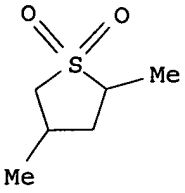
RN 675-20-7 HCAPLUS
CN 2-Piperidinone (9CI) (CA INDEX NAME)



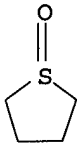
RN 872-50-4 HCAPLUS
CN 2-Pyrrolidinone, 1-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



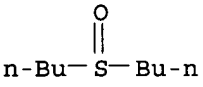
RN 1003-78-7 HCAPLUS
CN Thiophene, tetrahydro-2,4-dimethyl-, 1,1-dioxide (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



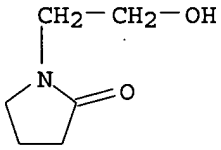
RN 1600-44-8 HCAPLUS
CN Thiophene, tetrahydro-, 1-oxide (6CI, 8CI, 9CI) (CA INDEX NAME)



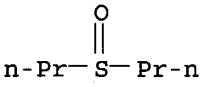
RN 2168-93-6 HCAPLUS
CN Butane, 1,1'-sulfinylbis- (9CI) (CA INDEX NAME)



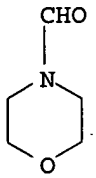
RN 3445-11-2 HCAPLUS
CN 2-Pyrrolidinone, 1-(2-hydroxyethyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



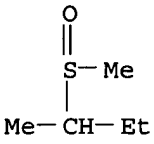
RN 4253-91-2 HCAPLUS
CN Propane, 1,1'-sulfinylbis- (9CI) (CA INDEX NAME)



RN 4394-85-8 HCAPLUS
CN 4-Morpholinecarboxaldehyde (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 70769-71-0 HCAPLUS
CN Butane, 2-(methylsulfinyl)- (9CI) (CA INDEX NAME)



IT **9012-90-2, DNA polymerase 9068-38-6,**
Reverse transcriptase
RL: CAT (Catalyst use); USES (Uses)
(improving activity and specificity of; low mol. weight additives increasing yield, accuracy, and sensitivity of nucleic acid **amplification** methods)
RN 9012-90-2 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9068-38-6 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate, RNA-dependent (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L141 ANSWER 8 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2002:575355** HCAPLUS
DN **137:121885**
ED Entered STN: 02 Aug 2002
TI A label-free high-throughput optical technique for detecting biomolecular interactions
IN Cunningham, Brian T.; Hobbs, Douglas; Pepper, Jane; Lin, Bo; Li, Peter; Pien, Homer
PA SRU Biosystems, LLC, USA
SO PCT Int. Appl., 140 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM G01N033-543
CC 9-1 (Biochemical Methods)
FAN.CNT 15

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002059602	A2	20020801	WO 2001-US50723	20011023 <--
	WO 2002059602	A3	20030130		
	WO 2002059602	C1	20030320		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,

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            LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT,
            RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ,
            VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
            DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
            BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     US 2002168295        A1    20021114    US 2001-929957         20010815 <--
     US 2003210396        A1    20031113    US 2001-1069           20011030 <--
     US 6870624           B2    20050322
     US 2004132172        A1    20040708    US 2004-415037         20040120
PRAI US 2000-244312P      P     20001030  <--
     US 2001-283314P      P     20010412
     US 2001-303028P      P     20010703
     US 2001-310399P      P     20010806
     WO 2001-US50723      W     20011023
CLASS
 PATENT NO.       CLASS  PATENT FAMILY CLASSIFICATION CODES
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 WO 2002059602    ICM    G01N033-543
 WO 2002059602    ECLA   B01L003/00C2D; G01N021/25B2; G01N021/47H;
                         G01N033/543K2; G02B005/18D                    <--
 US 2002168295    NCL    422/082.050
                  ECLA   G01N033/543K2                                  <--
 US 2003210396    NCL    356/416.000; 356/440.000; 422/082.050
                  ECLA   G02B005/18D; G02B005/20M                       <--
 US 2004132172    NCL    435/287.200; 435/288.700
                  ECLA   B01L003/00C2D; G01N021/25B2; G01N021/47H;
                         G01N033/543K2; G02B005/18D
AB   Methods and compns. are provided for detecting biomol. interactions.  The
     use of labels is not required and the methods can be performed in a
     high-throughput manner.  The invention also provides optical devices
     useful as narrow band filters.
ST   high throughput optical technique detecting biomol interaction
IT   Antibodies and Immunoglobulins
     RL: ANT (Analyte); ANST (Analytical study)
        (IgG; label-free high-throughput optical technique for detecting
        biomol. interactions)
IT   Immunoassay
        (enzyme-linked immunosorbent assay; label-free high-throughput optical
        technique for detecting biomol. interactions)
IT   Borrelia burgdorferi
     Computer program
     Diffraction gratings
     Eubacteria
     High throughput screening
     Immobilization, molecular or cellular
     Interference
     Lenses
     Mathematical methods
     Memory devices
     Molecular electronics
     Optical diffraction
     Optical fibers
     Photolithography
     Photoresists
     Polarization
     Reaction kinetics
     Refractive index
     Simulation and Modeling, physicochemical
     Surface structure
```

(label-free high-throughput optical technique for detecting biomol. interactions)

IT Receptors
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Epoxy resins, uses
RL: DEV (Device component use); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Glass, uses
RL: DEV (Device component use); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Plastics, uses
RL: DEV (Device component use); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Proteins
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT Optical disks
(memory devices; label-free high-throughput optical technique for detecting biomol. interactions)

IT Biosensors
(optical; label-free high-throughput optical technique for detecting biomol. interactions)

IT Vapor deposition process
(plasma; label-free high-throughput optical technique for detecting biomol. interactions)

IT Albumins, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(serum, bovine; label-free high-throughput optical technique for detecting biomol. interactions)

IT Coating process
(spin; label-free high-throughput optical technique for detecting biomol. interactions)

IT Interferons
RL: ANT (Analyte); ANST (Analytical study)
(γ; label-free high-throughput optical technique for detecting biomol. interactions)

IT 9013-20-1, Streptavidin **169592-56-7**, Caspase-3
RL: ANT (Analyte); ANST (Analytical study)
(label-free high-throughput optical technique for detecting biomol. interactions)

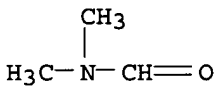
IT 74124-79-1, N, N'-Disuccinimidyl carbonate 443965-77-3 443965-78-4
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT 919-30-2, 3-Aminopropyltriethoxysilane 109940-19-4, Sulfo-succinimidyl-6-(biotinamido) hexanoate
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process)
(label-free high-throughput optical technique for detecting biomol. interactions)

IT 1314-61-0, Tantalum oxide 1314-98-3, Zinc sulfide, uses 7429-90-5,

Aluminum, uses 12033-89-5, Silicon nitride, uses 13463-67-7, Titanium dioxide, uses
RL: DEV (Device component use); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)
IT 67-56-1, Methanol, uses 67-63-0, Isopropyl alcohol, uses 67-64-1, Acetone, uses **68-12-2**, Dimethyl formamide, uses 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)
IT **169592-56-7**, Caspase-3
RL: ANT (Analyte); ANST (Analytical study)
(label-free high-throughput optical technique for detecting biomol. interactions)
RN 169592-56-7 HCAPLUS
CN Apopain (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **68-12-2**, Dimethyl formamide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(label-free high-throughput optical technique for detecting biomol. interactions)
RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 9 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2002:555629** HCAPLUS
DN **137:125359**
ED Entered STN: 26 Jul 2002
TI Preparation of nucleoside derivatives as inhibitors of RNA-dependent RNA viral **polymerase**
IN Carroll, Steven S.; Lafemina, Robert L.; Hall, Dawn L.; Himmelberger, Amy L.; Kuo, Lawrence C.; Maccoss, Malcolm; Olsen, David B.; Rutkowski, Carrie A.; Tomassini, Joanne E.; An, Haoyun; Bhat, Balkrishen; Bhat, Neelima; Cook, Phillip Dan; Eldrup, Anne B.; Guinosso, Charles J.; Prhavc, Marija; Prakash, Thazha P.
PA Merck & Co., Inc., USA; Isis Pharmaceuticals, Inc.
SO PCT Int. Appl., 235 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM C12N
CC 33-9 (Carbohydrates)
Section cross-reference(s): 1, 7, 63
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002057425	A2	20020725	WO 2002-US1531	20020118 <--
WO 2002057425	A3	20050421		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS,

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            LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL,
            PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,
            UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
            CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
            BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
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    US 2002147160       A1    20021010    US 2002-52318          20020118 <--
    US 6777395          B2    20040817
    JP 2004532184       T2    20041021    JP 2002-558479         20020118 <--
    US 2004072788       A1    20040415    US 2003-431657         20030507 <--
    ZA 2003005078       A     20040521    ZA 2003-5078           20030630 <--
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    US 2004110717       A1    20040610    US 2004-250873         20040116 <--
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    US 2001-282069P     P     20010406
    US 2001-299320P     P     20010619
    US 2001-344528P     P     20011025
    US 2002-52318       A3    20020118
    WO 2002-US1531      W     20020118
CLASS
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 US 2002147160    NCL    514/043.000; 536/026.230; 536/026.260; 536/026.700;
                         536/027.130; 536/027.200
                  ECLA   C07H019/14; C07H019/16E                             <--
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                         4C057/BB02; 4C057/BB05; 4C057/CC02; 4C057/CC03;
                         4C057/DD01; 4C057/DD03; 4C057/LL17; 4C057/LL18;
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                         4C057/LL50; 4C084/AA19; 4C084/NA14; 4C084/ZB331;
                         4C084/ZC201; 4C084/ZC202; 4C084/ZC751; 4C086/AA01;
                         4C086/AA02; 4C086/AA03; 4C086/CB05; 4C086/EA16;
                         4C086/EA17; 4C086/EA18; 4C086/MA01; 4C086/MA02;
                         4C086/MA04; 4C086/NA14; 4C086/ZB33; 4C086/ZC20;
                         4C086/ZC75                                         <--
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                  ECLA   C07H019/14; C07H019/16E                            <--
 US 2004067901    NCL    514/043.000; 536/027.200; 514/265.100; 544/281.000
                  ECLA   C07H019/14; C07H019/16E                            <--
 US 2004110717    NCL    514/045.000; 514/050.000; 514/249.000; 514/262.100;
                         514/269.000; 514/340.000                           <--
OS   MARPAT 137:125359
GI
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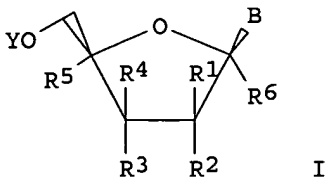

I

AB The present invention provides the preparation of nucleoside compds. I, wherein B is nucleobase, Y is H, alkylcarbonyl, phosphate; R1 is H, alkenyl, alkynyl, alkyl; R2 and R3 are independently H, OH, halogen, alkyl, alkoxy, alkenyloxy, alkylthio, alkylcarbonyloxy, aryloxycrbonyl, azido, amino, alkylamino; R1 and R2 together with the carbon atom to which they are attached form a 3- to 6-membered heterocycle; R4 is H, OH, SH, NH2, alkylamino, cycloalkylamino, halogen, alkyl, alkoxy, CF3; R5 and R6 are independently H, hydroxymethyl, Me, fluoromethyl; and certain derivs. thereof which are inhibitors of RNA-dependent RNA viral **polymerase**. These compds. are inhibitors of RNA-dependent RNA viral replication and are useful for the treatment of RNA-dependent RNA viral infection. They are particularly useful as inhibitors of hepatitis C virus (HCV) NS5B **polymerase**, as inhibitors of HCV replication, and/or for the treatment of hepatitis C infection. The invention also describes pharmaceutical compns. containing such nucleoside compds. alone or in combination with other agents active against RNA-dependent RNA viral infection, in particular HCV infection. Also disclosed are methods of inhibiting RNA-dependent RNA **polymerase**, inhibiting RNA-dependent RNA viral replication, and/or treating RNA-dependent RNA viral infection with the nucleoside compds. of the present invention. Thus, 4-amino-1-(2-C-methyl-β-D-ribofuranosyl)-1H-pyrazolo[3,4-d]pyrimidine was prepared as inhibitors of RNA-dependent RNA viral **polymerase.** Representative compds. tested in the HCV NS5B **polymerase** assay exhibited IC's less than 100 μM. The compds. of the present invention were also evaluated for their ability to affect the replication of Hepatitis C Virus RNA in cultured hepatoma (HuH-7) cells containing a sub-genomic HCV Replicon.

ST human cytotoxicity nucleoside prepn antiviral hepatitis C; cytotoxicity nucleoside prepn antiviral hepatitis C; nucleoside prepn inhibitor human RNA **polymerase** antiviral hepatitis C

IT Antiviral agents
Cytotoxicity
Fever and Hyperthermia
Hepatitis C virus
Human
Infection
(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT RNA formation
(replication; preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT Infection
(viral; preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT **9026-28-2**, RNA-dependent RNA **Polymerase**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Hepatitis C Virus NS5B; preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT 9026-93-1, Adenosine deaminase

RL: CAT (Catalyst use); USES (Uses)
(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT 2140-72-9P, 2'-O-Methylcytidine 120401-36-7P
RL: IMF (Industrial manufacture); PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT 86-01-1P 147-94-4P 606-58-6P 961-07-9P 2004-07-1P 2140-71-8P
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22423-10-5P 23197-98-0P 23567-96-6P 23567-97-7P 24121-00-4P
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62160-23-0P 64183-27-3P 64526-34-7P 65114-35-4P 65444-12-4P
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RL: IMF (Industrial manufacture); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

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RL: IMF (Industrial manufacture); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT 90213-73-3P 90213-74-4P 115479-40-8P 115479-42-0P 161110-12-9P
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RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT 160526-82-9P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT 94-99-5 **872-50-4**, 1-Methyl-2-pyrrolidinone, uses

RL: NUU (Other use, unclassified); USES (Uses)

(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT 60-24-2, 2-Mercaptoethanol 69-33-0, Tubercidin 124-07-2, Octanoic acid, reactions 524-38-9, N-Hydroxyphthalimide 937-14-4, 3-Chloroperbenzoic acid 1618-36-6 2096-10-8, 2-Aminoadenosine 2380-63-4, 1H-Pyrazolo[3,4-d]pyrimidin-4-amine 3680-69-1 7057-33-2, 3'-Deoxycytidine 15397-12-3 18422-43-0 19393-83-0 40635-67-4, α-Acetoxyisobutyryl bromide 56039-06-6 68703-51-5 70384-51-9 79159-76-5 84955-31-7 85335-76-8 90358-16-0 102690-94-8 102731-45-3 127047-59-0 129786-41-0 153121-88-1 168427-36-9 171763-19-2 177414-97-0 213623-59-7 318246-79-6 443642-59-9 443642-76-0 444018-75-1 444018-91-1 444018-94-4 444018-97-7 444019-00-5 444019-07-2 444019-11-8 444019-14-1 444019-16-3 444019-18-5 444019-20-9 444019-22-1 444019-24-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

IT **9012-90-2**, **DNA polymerase**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α, β, and γ human; preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

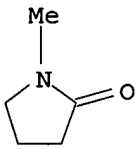
IT **9026-28-2**, RNA-dependent RNA **Polymerase**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(Hepatitis C Virus NS5B; preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

RN 9026-28-2 HCAPLUS
CN Nucleotidyltransferase, ribonucleate, RNA-dependent (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **872-50-4**, 1-Methyl-2-pyrrolidinone, uses
RL: NUU (Other use, unclassified); USES (Uses)
(preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

RN 872-50-4 HCAPLUS
CN 2-Pyrrolidinone, 1-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



IT **9012-90-2**, **DNA polymerase**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α, β, and γ human; preparation of nucleoside derivs. as inhibitors of RNA-dependent human RNA viral **polymerase**)

RN 9012-90-2 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L141 ANSWER 10 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2002:533078** HCAPLUS
DN **137:90188**
ED Entered STN: 17 Jul 2002
TI Reversible inactivation of thermostable **DNA polymerase** or ligase by lysine modification with dicarboxylic acid anhydride in an aprotic organic solvent

IN Louwrier, Ariel
PA Advanced Biotechnologies Ltd., UK
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12N009-12
ICS C12N009-99; C12N015-09; C12Q001-48
CC 7-3 (Enzymes)
Section cross-reference(s): 3
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2002199877	A2	20020716	JP 2000-364771	20001130
PRAI JP 2000-364771		20001130		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002199877	ICM	C12N009-12
	ICS	C12N009-99; C12N015-09; C12Q001-48

AB A method for reversibly inactivating thermostable **DNA polymerase** or ligase with dicarboxylic acid anhydride is disclosed. The method comprises reacting a mixture of the thermostable **DNA polymerase** or ligase with a dicarboxylic acid anhydride, wherein the reaction is carried out using a dried **DNA polymerase** or ligase in an anhydrous aprotic organic solvent, the dicarboxylic acid anhydride being also substantially anhydrous Inactivation of Thermus aquaticus (Taq) **DNA polymerase** by modification of lysine residues with citraconic acid anhydride in anhydrous t-methylbutyl ether (t-MBE), Et acetate, methylethyl ketone, or tetrachloromethane (carbon tetrachloride), is described.

ST **DNA polymerase** ligase inactivation dicarboxylic acid anhydride lysine modification; aprotic org solvent **DNA polymerase** ligase inactivation lysine modification

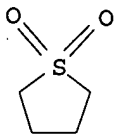
IT Carboxylic acids, reactions
RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(dicarboxylic, anhydride; reversible inactivation of thermostable **DNA polymerase** or ligase by lysine modification with dicarboxylic acid anhydride in aprotic organic solvent)

IT Solvents
(organic, aprotic; reversible inactivation of thermostable **DNA polymerase** or ligase by lysine modification with dicarboxylic acid anhydride in aprotic organic solvent)

IT 56-23-5, Tetrachloromethane, miscellaneous 78-93-3, Methylethyl ketone, miscellaneous 108-94-1, Cyclohexanone, miscellaneous 110-86-1, Pyridine, miscellaneous 111-43-3, Propyl ether **126-33-0**, **Sulpholane** 141-78-6, Ethyl acetate, miscellaneous 142-96-1, Butyl ether 1634-04-4, tert-Methylbutyl ether 63072-44-6, Methyl pentanone
RL: MSC (Miscellaneous)
(aprotic organic solvent; reversible inactivation of thermostable **DNA polymerase** or ligase by lysine modification with dicarboxylic acid anhydride in aprotic organic solvent)

IT **9012-90-2**, **DNA polymerase** 9015-85-4, DNA ligase 441742-31-0 441742-32-1
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(reversible inactivation of thermostable **DNA polymerase** or ligase by lysine modification with dicarboxylic acid anhydride in aprotic organic solvent)

IT 616-02-4, Citraconic acid anhydride
RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(reversible inactivation of thermostable **DNA polymerase** or ligase by lysine modification with dicarboxylic acid anhydride in aprotic organic solvent)
IT 56-87-1, L-Lysine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reversible inactivation of thermostable **DNA polymerase** or ligase by lysine modification with dicarboxylic acid anhydride in aprotic organic solvent)
IT **126-33-0, Sulpholane**
RL: MSC (Miscellaneous)
(aprotic organic solvent; reversible inactivation of thermostable **DNA polymerase** or ligase by lysine modification with dicarboxylic acid anhydride in aprotic organic solvent)
RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



IT **9012-90-2, DNA polymerase**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(reversible inactivation of thermostable **DNA polymerase** or ligase by lysine modification with dicarboxylic acid anhydride in aprotic organic solvent)
RN 9012-90-2 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L141 ANSWER 11 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2002:295299** HCAPLUS
DN **137:150765**
ED Entered STN: 21 Apr 2002
TI Novel sulfoxides facilitate GC-rich template **amplification**
AU **Chakrabarti, Raj; Schutt, Clarence E.**
CS **Princeton University, Princeton, NJ, USA**
SO BioTechniques (2002), 32(4), 866,868,870-872,874
CODEN: BTNQDO; ISSN: 0736-6205
PB Eaton Publishing Co.
DT Journal
LA English
CC 3-1 (Biochemical Genetics)
AB Certain organic solvents, such as DMSO and betaine, have been reported to enhance **PCR amplification**, particularly for hard-to-**amplify** high-GC templates. As a result of extensive structure-activity studies between two groups of compds.-amides and sulfones-we have recently discovered several other potent **PCR** enhancers. Here we describe the effects of a series of different sulfoxides on GC-rich template **amplification** and report several of these to be exceptionally effective, often outperforming DMSO. We introduce them as novel **PCR** enhancers. We identify **tetramethylene sulfoxide** as the most potent

sulfur-oxygen compound in the enhancement of **PCR amplification** and as one of the most potent **PCR** enhancers currently known.

ST sulfoxide **PCR** enhancer GC enriched DNA template

IT DNA
RL: ANT (Analyte); ANST (Analytical study)
(GC-rich **PCR** template; novel sulfoxides facilitate GC-rich template **amplification**)

IT **PCR (polymerase chain reaction)**
(enhancers for; novel sulfoxides facilitate GC-rich template **amplification**)

IT 951-77-9, Deoxy cytidine 961-07-9, Deoxy guanosine
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(novel sulfoxides facilitate GC-rich template **amplification**)

IT **1600-44-8, Tetramethylene sulfoxide**
4253-91-2, Propyl sulfoxide
445229-62-9
RL: MOA (Modifier or additive use); USES (Uses)
(novel sulfoxides facilitate GC-rich template **amplification**)

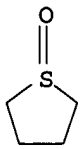
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

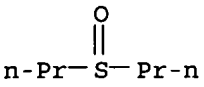
(1) Bachman, B; Nucleic Acids Res 1990, V18, P1309
(2) Baskaran, N; Genome Methods 1996, V6, P633 HCAPLUS
(3) Chakrabarti, R; Gene 2001, V274, P293 HCAPLUS
(4) Chakrabarti, R; Nucleic Acids Res 2001, V29, P2377 HCAPLUS
(5) Cheng, S; Proc Natl Acad Sci USA 1994, V91, P5695 HCAPLUS
(6) Ivinson, A; PCR: A Practical Approach 1991, P19
(7) Lee, C; Proc Natl Acad Sci USA 1981, V78, P2838 HCAPLUS
(8) McDowell, D; Nucleic Acids Res 1998, V26, P3340 HCAPLUS
(9) Newton, C; PCR 1997, P29
(10) Pomp, D; BioTechniques 1991, V10, P58 HCAPLUS
(11) Press, W; Numerical Recipes in C 1988, P94
(12) Roux, K; PCR Primer--A Laboratory Manual 1995, P55
(13) Saiki, R; Science 1988, V239, P487 HCAPLUS
(14) Smith, T; Amplifications 1990, V5, P16
(15) Varadaraj, K; Gene 1994, V140, P1 HCAPLUS
(16) Weissensteiner, T; BioTechniques 1996, V21, P1102 HCAPLUS
(17) Winship, P; Nucleic Acids Res 1989, V17, P1266 HCAPLUS

IT **1600-44-8, Tetramethylene sulfoxide**
4253-91-2, Propyl sulfoxide
445229-62-9
RL: MOA (Modifier or additive use); USES (Uses)
(novel sulfoxides facilitate GC-rich template **amplification**)

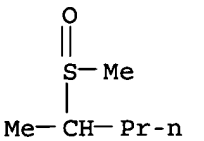
RN 1600-44-8 HCAPLUS
CN Thiophene, tetrahydro-, 1-oxide (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 4253-91-2 HCAPLUS
CN Propane, 1,1'-sulfinylbis- (9CI) (CA INDEX NAME)



RN 445229-62-9 HCAPLUS
CN Pentane, 2-(methylsulfinyl)- (9CI) (CA INDEX NAME)



L141 ANSWER 12 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2002:143226** HCAPLUS
DN **136:196563**
ED Entered STN: 22 Feb 2002
TI Method for isolating single-stranded DNA from double-stranded amplification products
IN Hornby, David P.; Dickman, Mark
PA UK
SO U.S. Pat. Appl. Publ., 18 pp.
CODEN: USXXCO
DT **Patent**
LA English
IC ICM C12Q001-68
ICS C12P019-34
INCL 435006000
CC **9-3** (**Biochemical Methods**)
Section cross-reference(s): **3**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2002022224	A1	20020221	US 2001-770846	20010126 <--
PRAI US 2000-200824P	P	20000428	<--	
US 2000-221340P	P	20000726	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 20020022224	ICM	C12Q001-68
	ICS	C12P019-34
	INCL	435006000
US 2002022224	NCL	435/006.000; 435/091.100
	ECLA	C12N015/10A2B; C12Q001/68A4+523/113 <--

AB A method for generating single-stranded DNA (ssDNA) directly from double-stranded **PCR** (dsPCR) products is described. The method generally entails: (1) amplifying a target polynucleotide by means of two oligonucleotide primers, wherein one primer is capable of hybridizing to the target polynucleotide and the other primer is capable of hybridizing to the complement of the target polynucleotide, and wherein one of the primers comprises a chemical tag, thereby producing an amplification product mixture comprising a tagged amplification product of the target polynucleotide and a complementary non-tagged amplification product; (2) applying the amplification product mixture to a separation medium, wherein the chemical tag is capable of interacting with the separation medium; and (3) eluting

the amplification products from the separation medium by means of a mobile phase under denaturing conditions, wherein the interaction between the tag and the separation medium results in the phys. separation of the two amplification products. Separation is preferably achieved under denaturing conditions using denaturing reversed-phase ion-pairing HPLC (RP-IP-DHPLC) on a DNASep chromatog. cartridge with dsDNA formed using asym. biotinylated primers. The stationary phase of the cartridge comprises a nonporous, C_18 alkylated poly(styrene-divinylbenzene) separation medium, and a buffer gradient containing 25% acetonitrile. The biotinylated oligonucleotide is eluted .apprx.2 min later than the non-biotinylated oligo.

ST single stranded DNA sepn amplification product; **PCR** product single stranded DNA sepn

IT Fluorescent indicators
(asym. labeled; method for isolating single-stranded DNA from double-stranded amplification products)

IT Primers (nucleic acid)
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(asym. labeled; method for isolating single-stranded DNA from double-stranded amplification products)

IT Spheres
(beads; method for isolating single-stranded DNA from double-stranded amplification products)

IT Quaternary ammonium compounds, uses
RL: NUU (Other use, unclassified); USES (Uses)
(counterion agents; method for isolating single-stranded DNA from double-stranded amplification products)

IT DNA
RL: PUR (Purification or recovery); PREP (Preparation)
(double-stranded; method for isolating single-stranded DNA from double-stranded amplification products)

IT Counterions
Nucleic acid amplification (method)
PCR (polymerase chain reaction)
(method for isolating single-stranded **DNA** from double-stranded amplification products)

IT Esters, uses
Ethers, uses
Nitriles, uses
RL: NUU (Other use, unclassified); USES (Uses)
(organic solvent; method for isolating single-stranded DNA from double-stranded amplification products)

IT Solvents
(organic; method for isolating single-stranded DNA from double-stranded amplification products)

IT Silica gel, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polymeric monolith; method for isolating single-stranded DNA from double-stranded amplification products)

IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(primary, counterion agents; method for isolating single-stranded DNA from double-stranded amplification products)

IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(secondary, counterion agents; method for isolating single-stranded DNA from double-stranded amplification products)

IT Diatomite
Polysaccharides, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(separation medium; method for isolating single-stranded DNA from double-stranded amplification products)

IT DNA
RL: PUR (Purification or recovery); PREP (Preparation)
(single-stranded; method for isolating single-stranded DNA from double-stranded amplification products)

IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(tertiary, counterion agents; method for isolating single-stranded DNA from double-stranded amplification products)

IT 1185-59-7, Tetraethylammonium acetate 2016-38-8, Decylammonium acetate 2016-40-2, Octylammonium acetate 2190-04-7, Octadecylammonium acetate 5153-63-9 5204-74-0, Triethylammonium acetate 7204-64-0, Tributylammonium acetate 7346-79-4 10534-59-5, Tetrabutylammonium acetate 10581-12-1, Tetramethylammonium acetate 20726-63-0, Diethylammonium acetate 56285-72-4 67846-20-2, Tripropylammonium acetate 69576-93-8, Tetrapropylammonium acetate 71788-19-7 173474-19-6 205490-75-1 224047-27-2 224047-28-3 224047-29-4
RL: NUU (Other use, unclassified); USES (Uses)
(counterion agents; method for isolating single-stranded DNA from double-stranded amplification products)

IT 58-85-5D, Biotin, DNA asymmtrically labeled 3301-79-9D, 6-FAM, DNA asymmtrically labeled
RL: TEM (Technical or engineered material use); USES (Uses)
(method for isolating single-stranded DNA from double-stranded amplification products)

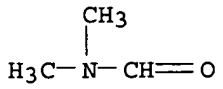
IT 64-17-5, Ethanol, uses **68-12-2**, DMF, uses 75-05-8, Acetonitrile, uses 109-99-9, THF, uses
RL: NUU (Other use, unclassified); USES (Uses)
(organic solvent; method for isolating single-stranded DNA from double-stranded amplification products)

IT 409-21-2, Silicon carbide, uses 1314-23-4, Zirconium oxide, uses 1344-28-1, ALuminum oxide, uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses 13463-67-7, Titanium oxide, uses 23377-49-3
RL: TEM (Technical or engineered material use); USES (Uses)
(separation medium; method for isolating single-stranded DNA from double-stranded amplification products)

IT 400702-69-4 400702-70-7 400702-71-8 400702-72-9 400702-73-0 400702-74-1 400702-75-2
RL: PRP (Properties)
(unclaimed sequence; method for isolating single-stranded DNA from double-stranded amplification products)

IT **68-12-2**, DMF, uses
RL: NUU (Other use, unclassified); USES (Uses)
(organic solvent; method for isolating single-stranded DNA from double-stranded amplification products)

RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 13 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2001:798415** HCAPLUS
DN **135:341168**

ED Entered STN: 02 Nov 2001
TI Chromatographic method and apparatus for separating and purifying polynucleotides on polymeric separation medium
IN Gjerde, Douglas T.; Hanna, Christopher P.; Hornby, David; Dickman, Mark; Legendre, Benjamin J., Jr.; Taylor, Paul; Haefele, Robert; Azarani, Arezou
PA Transgenomic, Inc., USA
SO PCT Int. Appl., 102 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM C12N015-10
CC **9-3 (Biochemical Methods)**
Section cross-reference(s): **3**

FAN.CNT 34

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2001081566	A2	20011101	WO 2001-US12913	20010420	<--
	WO 2001081566	A3	20020510			
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	US 6475388	B1	20021105	US 2000-557424	20000421	<--
	US 6355165	B1	20020312	US 2000-580302	20000526	<--
	US 2001023290	A1	20010920	US 2001-764041	20010116	<--
	US 6642374	B2	20031104			
	EP 1274837	A2	20030115	EP 2001-932598	20010420	<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR					
PRAI	US 2000-557424	A	20000421	<--		
	US 2001-764041	A	20010116	<--		
	US 1996-748376	A2	19961113	<--		
	US 1997-44856P	P	19970425	<--		
	US 1998-58580	B1	19980410	<--		
	US 1998-65913	A1	19980424	<--		
	US 1998-99825P	P	19980910	<--		
	US 1998-183123	A2	19981030	<--		
	US 1999-119936P	P	19990212	<--		
	US 1999-295474	A3	19990419	<--		
	US 1999-391963	A1	19990908	<--		
	US 2000-187979P	P	20000309	<--		
	WO 2001-US12913	W	20010420			
	US 2002-187974P	P	20020309			

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
WO 2001081566	ICM	C12N015-10	
WO 2001081566	ECLA	C12N015/10A2B	<--
US 6475388	NCL	210/635.000; 210/198.200; 210/656.000; 435/006.000; 536/025.400	<--
US 6355165	NCL	210/198.200; 210/175.000; 210/656.000	
	ECLA	B01D015/16B; B01D015/20; B01D015/36P; G01N030/30; G01N030/54; G01N030/96	<--
US 2001023290	NCL	536/025.410; 536/025.400	
	ECLA	B01D015/08; B01J020/26; B01J020/32; C12N015/10A2B;	

C12Q001/68A4 <--

AB The instant invention provides a non-HPLC chromatog. method for purifying a target polynucleotide comprising the steps of: applying the target polynucleotide to a separation medium having a non-polar separation surface in the presence of a counterion agent, whereby the polynucleotide is bound to the separation medium; eluting the target polynucleotide from the separation medium by passing through the separation medium an elution solution containing a concentration of organic solvent sufficient to elute the target polynucleotide from the separation medium; and collecting the eluted target polynucleotide. The term "non-HPLC chromatog. method" is intended to encompass any chromatog. method which does not involve the use of a pump to generate high pressure to force eluant through a chromatog. column. In general, non-HPLC chromatog. methods are more economical than HPLC, which represents a significant advantage of the instant invention. Non-polar polymeric separation media, such as beads or monoliths, are suitable for chromatog. separation of mixts. of polynucleotides when the surfaces of the media are unsubstituted or substituted with a hydrocarbon group and when the surfaces are substantially free from multivalent cations capable of interfering with polynucleotide sepns. The separation medium can be supported in any of a variety of containers, non-limiting preferred examples of which include spin columns and vacuum trays. Methods for maintaining and storing the polymeric media include treatment with multivalent cation binding agents. The invention is particularly useful for the separation of RNA and single and double stranded DNA. Ion pairing reverse phase HPLC (IP-RP-HPLC) is a technique for the separation and anal. of polynucleotides that has been shown to achieve high resolution sepns. in a reproducible manner. A superior form of IP-RP-HPLC, termed Matched Ion Polynucleotide Chromatog. (MIPC), is described.

ST chromatog method app polynucleotide polymeric sepn medium

IT Chromatography
(Matched Ion Polynucleotide Chromatog. (MIPC); chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)

IT Washing
(acid, to remove surface metal contaminants; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)

IT Spheres
(beads, or monoliths, separation medium comprises; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)

IT Centrifuges
Chromatographs
Counterions
(chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)

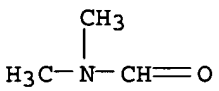
IT Oligonucleotides
Polynucleotides
RNA
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation); PROC (Process)
(chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)

IT DNA
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); PUR

(Purification or recovery); ANST (Analytical study); PREP (Preparation); PROC (Process)
(double-stranded; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Polysaccharides, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(insol., separation medium comprises particles of; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Cations
(multivalent, separation medium and solns. free from; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Hydrocarbons, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(non-polar hydrocarbon substituted, separation medium surfaces; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Mixtures
(organic solvent; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Alcohols, uses
Esters, uses
Ethers, uses
Nitriles, uses
RL: NUU (Other use, unclassified); USES (Uses)
(organic solvent; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Solvents
(organic, polynucleotide elution from separation medium using; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(primary, lower alkyl, counterion agent; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(secondary, lower alkyl, counterion agent; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Diatomite
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(separation medium comprises particles of; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Capillary tubes
(separation medium comprises; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Polymers, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

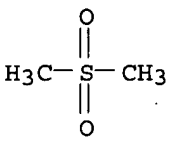
(separation medium surfaces; chromatog. method and apparatus for separating and
purifying polynucleotides on polymeric separation medium)
IT **PCR (polymerase chain reaction)**
(separation of **PCR** products; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT DNA
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); ANST (Analytical study); PREP (Preparation); PROC (Process)
(single-stranded; chromatog. method and apparatus for separating and purifying
polynucleotides on polymeric separation medium)
IT Liquid chromatographic columns
(spin, separation medium supported in; chromatog. method and apparatus for separating
and purifying polynucleotides on polymeric separation medium)
IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(tertiary, lower alkyl, counterion agent; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(tertiary, salts, counterion agent; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT Containers
(vacuum, tray, separation medium supported in; chromatog. method and apparatus
for separating and purifying polynucleotides on polymeric separation medium)
IT 9003-53-6, Polystyrene 9003-69-4, Polydivinylbenzene
RL: DEV (Device component use); USES (Uses)
(beads; chromatog. method and apparatus for separating and purifying polynucleotides on polymeric separation medium)
IT 71-47-6, Formate, uses 71-50-1, Acetate, uses 72-03-7, Propionate, uses 1185-59-7, Tetraethylammonium acetate 2016-38-8, Decylammonium acetate 2016-40-2, Octylammonium acetate 2190-04-7, Octadecylammonium acetate 5204-74-0, Triethylammonium acetate 7204-64-0, Tributylammonium acetate 10511-03-2, Dimethyl ammonium acetate 10534-59-5, Tetrabutylammonium acetate 10581-12-1, Tetramethylammonium acetate 20726-63-0, Diethylammonium acetate 67846-20-2, Tripropylammonium acetate 69576-93-8, Tetrapropylammonium acetate
RL: NUU (Other use, unclassified); USES (Uses)
(counterion agent; chromatog. method and apparatus for separating and purifying
polynucleotides on polymeric separation medium)
IT **68-12-2**, Dimethylformamide, uses 75-05-8, Acetonitrile, uses 109-99-9, Tetrahydrofuran, uses
RL: NUU (Other use, unclassified); USES (Uses)
(organic solvent; chromatog. method and apparatus for separating and purifying
polynucleotides on polymeric separation medium)
IT 409-21-2, Silicon carbide, uses 1314-23-4, Zirconium oxide, uses 1344-28-1, Aluminum oxide, uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses 12033-89-5, Silicon nitride (Si3N4), uses 13463-67-7, Titanium oxide, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(separation medium comprises particles of; chromatog. method and apparatus for
separating and purifying polynucleotides on polymeric separation medium)

IT 371800-36-1 371800-37-2 371800-38-3 371800-39-4, 4: PN: WO0181566 SEQID: 4 unclaimed DNA 371800-40-7
RL: PRP (Properties)
(unclaimed nucleotide sequence; chromatog. method and apparatus for separating
and purifying polynucleotides on polymeric separation medium)
IT **68-12-2**, Dimethylformamide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(organic solvent; chromatog. method and apparatus for separating and purifying
polynucleotides on polymeric separation medium)
RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)

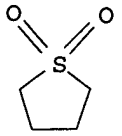


L141 ANSWER 14 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2001:665846** HCAPLUS
DN **136:273728**
ED Entered STN: 12 Sep 2001
TI The enhancement of **PCR amplification** by low molecular-weight sulfones
AU **Chakrabarti, R.; Schutt, C. E.**
CS Department of Chemistry, **Princeton** University, **Princeton**, NJ, 08544, USA
SO Gene (2001), 274(1-2), 293-298
CODEN: GENED6; ISSN: 0378-1119
PB Elsevier Science B.V.
DT Journal
LA English
CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 9
AB DNA **amplification** by **polymerase chain reaction** (**PCR**) is frequently complicated by the problems of low yield and specificity, especially when the GC content of the target sequence is high. A common approach to the optimization of such **reactions** is the addition of small quantities of certain organic chems., such as dimethylsulfoxide (DMSO), betaine, polyethylene glycol and formamide, to the **reaction** mixture Even in the presence of such additives, however, the **amplification** of GC-rich templates is often ineffective. In this paper, we introduce a novel class of **PCR**-enhancing compds., the low mol.-weight sulfones, that are effective in the optimization of high GC template **amplification.** We describe here the results of an extensive structure-activity investigation in which we studied the effects of a series of six different sulfones on **PCR amplification.** We identify two sulfones, **sulfolane** and **Me sulfone**, that are especially potent enhancers of high GC template **amplification**, and show that these compds. often outperform DMSO and betaine, two of the most effective **PCR** enhancers currently used. We conclude with a brief discussion of the role that the sulfone functional group may play in such enhancement.
ST **PCR amplification** enhancement low MW sulfone
IT **PCR (polymerase chain reaction)**
(enhancement of **PCR amplification** by low mol.-weight

sulfones)
IT DNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(high GC, low mol.-weight sulfones effective in optimization of high GC template **amplification**; enhancement of **PCR amplification** by low mol.-weight sulfones)
IT Sulfones
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(low mol.-weight; enhancement of **PCR amplification** by low mol.-weight sulfones)
IT **67-71-0**, **Methyl sulfone 126-33-0**, **Sulfolane**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(especially potent enhancer of high GC template **amplification**; enhancement of **PCR amplification** by low mol.-weight sulfones)
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; CRC Handbook of Chemistry and Physics 1970, PE70
(2) Bachman, B; Nucleic Acids Res 1990, V18, P1309
(3) Baskaran, N; Genome Methods 1996, V6, P633 HCAPLUS
(4) Chakrabarti, R; Nucleic Acids Res 2001, V29, P2377 HCAPLUS
(5) Cheng, S; Proc Natl Acad Sci USA 1994, V91, P5695 HCAPLUS
(6) Das, S; US 6143504 2000 HCAPLUS
(7) Henke, W; Nucleic Acids Res 1997, V19, P3957
(8) Ivinson, A; PCR: A Practical Approach 1991, P19
(9) Lee, C; Proc Natl Acad Sci USA 1981, V78, P2838 HCAPLUS
(10) McDowell, D; Nucleic Acids Res 1998, V26, P3340 HCAPLUS
(11) Miller, G; US 5545539 1996 HCAPLUS
(12) Newton, C; PCR 1994
(13) Pomp, D; Biotechniques 1991, V10, P58 HCAPLUS
(14) Roux, K; PCR Primer -- A Laboratory Manual 1995, P55
(15) Smith, T; Amplifications 1990, V5, P16
(16) Varadaraj, K; Gene 1994, V140, P1 HCAPLUS
(17) Weissensteiner, T; Biotechniques 1996, V21, P1102 HCAPLUS
(18) Winship, P; Nucleic Acids Res 1989, V17, P1266 HCAPLUS
IT **67-71-0**, **Methyl sulfone 126-33-0**, **Sulfolane**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(especially potent enhancer of high GC template **amplification**; enhancement of **PCR amplification** by low mol.-weight sulfones)
RN 67-71-0 HCAPLUS
CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 15 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2001:618200** HCAPLUS
DN **135:192476**
ED Entered STN: 24 Aug 2001
TI Multiple-site reaction device and method for sequence-specific nucleic acid targeting
IN Sharat, Singh; Cao, Liching; Hooper, Herbert H.; Albagli, David; Anderson, Rolfe; Zeng, Shulin
PA Aclara Biosciences Inc., USA
SO PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM C12Q001-68
CC **9-1 (Biochemical Methods)**
Section cross-reference(s): **3**
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001061041	A2	20010823	WO 2001-US4884	20010216 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2400207	AA	20010823	CA 2001-2400207	20010216 <--
	EP 1259324	A2	20021127	EP 2001-910751	20010216 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003522963	T2	20030729	JP 2001-559877	20010216 <--
PRAI	US 2000-183626P	P	20000218 <--		
	WO 2001-US4884	W	20010216		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2001061041	ICM	C12Q001-68
WO 2001061041	ECLA	B01J019/00C; B01L003/00C6M <--

AB The invention concerns a method and device for performing a plurality of small-volume reactions simultaneously. The device includes an elongate or planar channel and a port for introducing such bulk-phase medium into the channel, a plurality of discrete small-volume reaction regions within the channel, and a reaction-specific reagent releasably carried on a wall portion of each reaction region. In carrying out the method of the invention, a bulk phase medium containing common reactants is added to the channel. Upon release of reaction-specific reagent from the wall portions of the reaction regions, a reagent-specific reaction can occur simultaneously in each region. The channel is dimensioned to substantially prevent convective fluid flow among the reaction regions

during such reactions. The device is demonstrated for use in sequence-specific nucleic acid reactions involving target nucleic acids present in the bulk-phase medium, where the reaction-specific reagents are nucleic acid oligomer reagents releasably bound to the wall portions, or via an immobilized ligand. Diagrams describing the apparatus assembly are given.

ST app channel oligonucleotide immobilization nucleic acid hybridization **PCR** primers

IT Analytical apparatus
Electrokinetic phenomena
Gaskets
Genetic methods
Immobilization, biochemical
Lids
Molecular association
Molecular recognition
Nucleic acid hybridization
PCR (polymerase chain reaction)
(Multiple-site **reaction** device and method for sequence-specific nucleic acid targeting)

IT Primers (nucleic acid)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Multiple-site reaction device and method for sequence-specific nucleic acid targeting)

IT Oligonucleotides
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(Multiple-site reaction device and method for sequence-specific nucleic acid targeting)

IT Amplicon
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(**PCR**; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)

IT Temperature effects, biological
(heating and cooling for amplicons; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)

IT **PCR (polymerase chain reaction)**
(multiplex; Multiple-site **reaction** device and method for sequence-specific nucleic acid targeting)

IT Reactors
(reaction chamber; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)

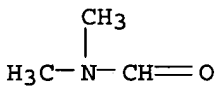
IT Albumins, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(serum, bovine, conjugate; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)

IT Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(spacer; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)

IT Gene, animal
RL: ANT (Analyte); ANST (Analytical study)
(β-actin; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)

IT 68181-17-9DP, conjugate with bovine serum albumin and 4-benzoylbenzoic acid
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(Multiple-site reaction device and method for sequence-specific nucleic

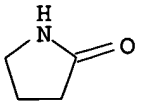
acid targeting)
IT 9025-82-5, 5'-Exonuclease
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(Multiple-site reaction device and method for sequence-specific nucleic acid targeting)
IT 58-85-5DP, Biotin, conjugate with bovine serum albumin and benzophenone
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(Multiple-site reaction device and method for sequence-specific nucleic acid targeting)
IT 611-95-0, 4-Benzoylbenzoic acid 611-95-0D, 4-Benzoylbenzoic acid, conjugate with bovine serum albumin, SPDP and biotin 89889-52-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(Multiple-site reaction device and method for sequence-specific nucleic acid targeting)
IT 68181-17-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(SPDP; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)
IT **68-12-2**, Dimethylformamide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(anhydrous; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)
IT 25322-68-3
RL: NUU (Other use, unclassified); USES (Uses)
(spacer; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)
IT 321773-07-3, 5: PN: WO0106008 SEQID: 5 unclaimed DNA 356611-22-8
356611-23-9 356611-25-1 356611-26-2 356611-27-3 356611-28-4
356611-29-5 356611-30-8 356611-31-9 356611-32-0 356611-33-1
356611-34-2 356611-35-3 356611-36-4 356611-37-5 356611-38-6
356611-39-7 356611-40-0 356611-41-1 356611-42-2
RL: PRP (Properties)
(unclaimed nucleotide sequence; multiple-site reaction device and method for sequence-specific nucleic acid targeting)
IT **68-12-2**, Dimethylformamide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(anhydrous; Multiple-site reaction device and method for sequence-specific nucleic acid targeting)
RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 16 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2001:440406** HCAPLUS
DN **136:129574**
ED Entered STN: 19 Jun 2001
TI The enhancement of **PCR amplification** by low molecular weight amides
AU **Chakrabarti, Raj; Schutt, Clarence E.**
CS Department of Chemistry, **Princeton** University, **Princeton**, NJ, 08544, USA
SO Nucleic Acids Research (**2001**), 29(11), 2377-2381
CODEN: NARHAD; ISSN: 0305-1048

PB Oxford University Press
DT Journal
LA English
CC 3-1 (Biochemical Genetics)
AB **Amplification** of a DNA target by the **polymerase chain reaction** (**PCR**) often requires laborious optimization efforts. In this regard, the use of certain organic chems. such as DMSO, polyethylene glycol, betaine and formamide as cosolvents has been found to be very helpful. Unfortunately, very little is known about the precise structural features that make these additives effective and, accordingly, the number of such chems. currently known to enhance **PCR** is limited. In order to address these issues, the authors decided to focus on formamide and undertook an extensive study of low mol. weight amides as a class to see how changing the substituents in the amide structure influences its effect on **PCR**. The authors describe here the results of this study, which involved 11 different amides, and present observations that provide a cohesive picture of structure-activity relations in this group of additives. The authors found several of these amides to be exceptionally effective and introduce them as novel **PCR** enhancers.
ST **PCR amplification** enhancement acetamide pyrrolidone amide
IT **PCR (polymerase chain reaction)**
(enhancement of **PCR amplification** by low mol. weight amides)
IT Amides, biological studies
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(low-mol.-weight; enhancement of **PCR amplification** by low mol. weight amides)
IT 60-35-5, Acetamide, biological studies **616-45-5**, 2-Pyrrolidone
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(enhancement of **PCR amplification** by low mol. weight amides)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bachman, B; Nucleic Acids Res 1990, V18, P1309
(2) Cheng, S; Proc Natl Acad Sci USA 1994, V91, P5695 HCAPLUS
(3) Henegariu, O; Biotechniques 1997, V23, P504 HCAPLUS
(4) Henke, W; Nucleic Acids Res 1997, V19, P3957
(5) Ivinson, A; PCR: A Practical Approach 1991, P19
(6) Landre, P; PCR Strategies 1995, P3
(7) Lee, C; Proc Natl Acad Sci USA V78, P2838 HCAPLUS
(8) Newton, C; PCR Bios Scientific, Oxford 1994
(9) Pomp, D; Biotechniques 1991, V10, P58 HCAPLUS
(10) Roux, K; PCR Primer - A Laboratory Manual 1995, P55
(11) Saiki, R; Science 1988, V239, P487 HCAPLUS
(12) Sarkar, G; Nucleic Acids Res 1990, V18, P7465 HCAPLUS
(13) Smith, T; Amplifications 1990, V5, P16
(14) Varadaraj, K; Gene 1994, V140, P1 HCAPLUS
(15) Weissensteiner, T; Biotechniques 1996, V21, P1102 HCAPLUS
(16) Winship, P; Nucleic Acids Res 1989, V17, P1266 HCAPLUS
IT **616-45-5**, 2-Pyrrolidone
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(enhancement of **PCR amplification** by low mol. weight

amides)
RN 616-45-5 HCAPLUS
CN 2-Pyrrolidinone (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 17 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2001:152354** HCAPLUS
DN **134:190013**
ED Entered STN: 02 Mar 2001
TI Reversible inactivation of thermostable **DNA polymerase** or ligase with a dicarboxylic acid anhydride in an aprotyic organic solvent and application to **PCR**
IN Louwrier, Ariel
PA Advanced Biotechnologies Ltd., UK
SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C12N009-99
ICS C12N009-12; C12Q001-68
CC 7-3 (Enzymes)
Section cross-reference(s): 3
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1078984	A1	20010228	EP 2000-307337	20000825
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
GB 2353530	A1	20010228	GB 2000-21086	20000825
US 6479264	B1	20021112	US 2000-649707	20000825
PRAI GB 1999-20194	A	19990827		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1078984	ICM	C12N009-99
	ICS	C12N009-12; C12Q001-68
EP 1078984	ECLA	C12N009/99; C12Q001/68D2A+527/125; C12Q001/68D4+527/125; C12Q001/68D6+527/125
GB 2353530	ECLA	C12N009/99; C12Q001/68D2A+527/125; C12Q001/68D4+527/125; C12Q001/68D6+527/125
US 6479264	NCL	435/183.000; 435/091.200; 435/184.000; 530/411.000
	ECLA	C12N009/99; C12Q001/68D2A+527/125; C12Q001/68D4+527/125; C12Q001/68D6+527/125

AB A method for reversibly inactivating thermostable **DNA polymerase** or ligase and its application to **PCR** is disclosed. The method comprises reacting a mixture of the thermostable **DNA polymerase** or ligase with a dicarboxylic acid anhydride, wherein the reaction is carried out using a dried **DNA polymerase** or ligase in an anhydrous aprotic organic solvent, the dicarboxylic acid anhydride being also substantially anhydrous, whereby the reaction results in essentially complete inactivation of enzyme activity.
ST **DNA polymerase** ligase inactivation dicarboxylic acid anhydride **PCR**; aprotic org solvent **DNA**

polymerase ligase inactivation **PCR**

IT Solvents
(aprotic; reversible inactivation of thermostable **DNA** **polymerase** or ligase with dicarboxylic acid anhydride in aprotyic organic solvent and application to **PCR**)

IT Anhydrides
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cyclic; reversible inactivation of thermostable **DNA** **polymerase** or ligase with dicarboxylic acid anhydride in aprotyic organic solvent and application to **PCR**)

IT **PCR (polymerase chain reaction)**
(reversible inactivation of thermostable **DNA** **polymerase** or ligase with dicarboxylic acid anhydride in aprotyic organic solvent and application to **PCR**)

IT 56-87-1, Lysine, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(modification of lysine by dicarboxylic acid anhydride; reversible inactivation of thermostable **DNA polymerase** or ligase with dicarboxylic acid anhydride in aprotyic organic solvent and application to **PCR**)

IT 616-02-4, Citraconic anhydride
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(reversible inactivation of thermostable **DNA** **polymerase** or ligase with dicarboxylic acid anhydride in aprotyic organic solvent and application to **PCR**)

IT **9012-90-2, DNA polymerase** 9015-85-4, DNA ligase
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)
(reversible inactivation of thermostable **DNA** **polymerase** or ligase with dicarboxylic acid anhydride in aprotyic organic solvent and application to **PCR**)

IT 56-23-5, Carbon tetrachloride, biological studies 78-93-3, Methyl ethyl ketone, biological studies 108-94-1, Cyclohexanone, biological studies 110-86-1, Pyridine, biological studies 111-43-3, Propyl ether **126-33-0, Sulfolane** 141-78-6, Ethyl acetate, biological studies 142-96-1, Butyl ether 1634-04-4, tert-Methyl butyl ether 63072-44-6, Methyl pentanone
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(reversible inactivation of thermostable **DNA** **polymerase** or ligase with dicarboxylic acid anhydride in aprotyic organic solvent and application to **PCR**)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

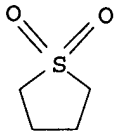
RE

(1) Bonnaffe, D; US 5262525 A 1993 HCAPLUS
(2) Laird, W; US 5677152 A 1997 HCAPLUS
(3) Laird, W; US 5773258 A 1998 HCAPLUS
(4) Palacian, E; MOLECULAR AND CELLULAR BIOCHEMISTRY 1990, V97(2), P101 HCAPLUS
(5) Qiagen Gmbh; EP 0962526 A 1999 HCAPLUS

IT **9012-90-2, DNA polymerase**
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); PROC (Process); USES (Uses)

(reversible inactivation of thermostable **DNA** **polymerase** or ligase with dicarboxylic acid anhydride in aprotyic organic solvent and application to **PCR**)
RN 9012-90-2 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **126-33-0, Sulfolane**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(reversible inactivation of thermostable **DNA** **polymerase** or ligase with dicarboxylic acid anhydride in aprotyic organic solvent and application to **PCR**)
RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 18 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2000:881296** HCAPLUS
DN **134:37974**
ED Entered STN: 15 Dec 2000
TI RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions
IN Goldsborough, Andrew Simon
PA Cyclops Genome Sciences Ltd., UK
SO PCT Int. Appl., 187 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM C12N015-11
ICS C07H021-00
CC **3-4** (**Biochemical Genetics**)
Section cross-reference(s): 6, 7, 33
FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000075306	A2	20001214	WO 2000-GB1670	20000502 <--
WO 2000075306	A3	20010517		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

WO 2001094626	A1	20011213	WO 2000-GB1683	20000502 <--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,

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            SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA,
            ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
            DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
            CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     EP 1196631          A1    20020417    EP 2000-929665          20000502 <--
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO
     US 2003039985       A1    20030227    US 2001-11495           20011026 <--
     US 6867290          B2    20050315
PRAI GB 1999-10154       A     19990430  <--
     GB 1999-10156       A     19990430  <--
     GB 1999-10157       A     19990430  <--
     GB 1999-10158       A     19990430  <--
     WO 2000-GB1683      W     20000502  <--
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 WO 2000075306   ICM    C12N015-11
                 ICS    C07H021-00
 WO 2000075306   ECLA   C07H021/00; C07H021/00C4; C12P019/34; C12Q001/68    <--
 WO 2001094626   ECLA   C07H021/00C4; C12P019/34; C12Q001/68                <--
 US 2003039985   NCL    536/023.100; 435/006.000; 435/091.100; 536/024.300
                 ECLA   C07H021/00; C07H021/00C4; C12P019/34; C12Q001/68    <--
OS   MARPAT 134:37974
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AB Provided is a polynucleotide comprising mRNA, rRNA or viral RNA, greater than 25% of the ribose rings of which are covalently modified at the 2'-OH position. Further provided is a method for producing a double-stranded oligo- or polynucleotide from a template, which comprises contacting the template with a plurality of mononucleotides comprising UTP, dTTP and/or dUTP, ATP and/or dATP, GTP and/or dGTP, and CTP and/or dCTP, in the presence of a nucleic acid **polymerase** and optionally a template primer under conditions to polymerize the mononucleotides to form a nucleic acid strand complementary to the template, wherein the template comprises an oligo- or polyribonucleotide, a proportion of the ribose rings of which are covalently modified at the 2' -OH position to bear a substituent which enables replication of the template by the nucleic acid **polymerase.** Thus, for example, RNA may be modified by formylation at the ribose 2'-OH position and still serve as an excellent template for reverse transcriptases. The consequence of modifying the ribose 2'-OH groups is to increase the stability and intactness of the RNA, allowing complete cDNA copes and accurate measurements of its size and abundance to be made. It is preferable to choose 2'-OH modifications that provide the maximum stability to the modified RNA, yet can be readily removed under mild conditions without leading to RNA **chain** cleavage. A wide variety of acylation, acetylation, and other modification **reaction** reagents and catalysts are described. Also provided is use of a polynucleotide comprising mRNA, rRNA or viral RNA, a proportion of the ribose rings of which are covalently modified at the 2' -OH position, in a hybridization **reaction.** RNA modified by acetylation has altered hybridization properties, probably reflecting a lower Tm of the hybrid, and standard conditions for Northern blotting are probably too stringent and a lower temperature should be chosen.

ST RNA modification polymn replication transcription; acylation RNA polymn replication transcription; acetylation RNA polymn replication transcription

IT Acetylation
Acetylation catalysts
Acylation
Acylation catalysts

Dot blot hybridization
Formylation
Northern blot hybridization
Nucleic acid hybridization
PCR (polymerase chain reaction)
Reverse transcription
Sialylation
Transcription, genetic
(RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization **reactions**)

IT Oligonucleotides
Polynucleotides
RNA
Viral RNA
mRNA
rRNA
tRNA
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT **PCR (polymerase chain reaction)**
(RT-**PCR** (reverse transcription-**PCR**); RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization **reactions**)

IT Halides
RL: CAT (Catalyst use); USES (Uses)
(acetylation catalyst; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT Acid halides
RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation reagent; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT Carboxylic acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction with; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT Diagnosis
(genetic; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT Solvents
(organic; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT Nitriles, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxo; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT RNA formation
(replication; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT Condensation reaction
(with carboxylic acids; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT **9012-90-2**, DNA-dependent **DNA polymerase**

9026-28-2, RNA-dependent RNA **polymerase**
9037-17-6, Nucleic acid **polymerase 9068-38-6**,
RNA-dependent **DNA polymerase**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); CAT (Catalyst use); BIOL (Biological study); USES (Uses)
(RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 3970-21-6, 2-Methoxyethoxymethyl chloride 13154-24-0, Triisopropylchlorosilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 998-40-3, Tributylphosphine 16984-48-8, Fluoride, uses
RL: CAT (Catalyst use); USES (Uses)
(acetylation catalyst; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 2466-76-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(acetylation reagent; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 142-08-5, 2-Hydroxypyridine 1122-58-3, 4-Dimethylaminopyridine 7188-38-7, tert-Butyl isocyanide 26445-05-6, Aminopyridine 30346-87-3, Methylimidazole
RL: CAT (Catalyst use); USES (Uses)
(acylation catalyst; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 75-36-5, Acetyl chloride 106-31-0, Butyric anhydride 123-76-2, Levulinic acid 541-88-8, Chloroacetic anhydride 2082-59-9, Pentanoic anhydride 2258-42-6, Acetic formic anhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(acylation reagent; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 7772-99-8, Tin dichloride, uses
RL: CAT (Catalyst use); USES (Uses)
(catalyst for 2'-Me ether formation; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 78823-32-2, Benzoic formic anhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(formylation reagent; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 26299-14-9, Pyridinium chlorochromate
RL: CAT (Catalyst use); USES (Uses)
(oxidation catalyst; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 17455-13-9, Crown 18-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(protection with; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)

IT 74-88-4, Methyl iodide, reactions 334-88-3, Diazomethane
RL: RCT (Reactant); RACT (Reactant or reagent)
(reagent for 2'-Me ether formation; RNA polynucleotide modified at the

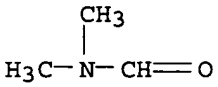
ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)
IT 701-99-5, Phenoxyacetyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reagent; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)
IT 429-41-4, TBAF 73602-61-6
RL: CAT (Catalyst use); USES (Uses)
(silylation catalyst; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)
IT **68-12-2**, Dimethylformamide, uses 109-99-9, Tetrahydrofuran, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent for modification reaction; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)
IT **9012-90-2**, DNA-dependent **DNA polymerase**
9026-28-2, RNA-dependent RNA **polymerase**
9037-17-6, Nucleic acid **polymerase 9068-38-6**,
RNA-dependent **DNA polymerase**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); CAT (Catalyst use); BIOL (Biological study); USES (Uses)
(RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)
RN 9012-90-2 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9026-28-2 HCAPLUS
CN Nucleotidyltransferase, ribonucleate, RNA-dependent (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9037-17-6 HCAPLUS
CN Nucleotidyltransferase, nucleate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9068-38-6 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate, RNA-dependent (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **68-12-2**, Dimethylformamide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent for modification reaction; RNA polynucleotide modified at the ribose 2'-OH position that are still capable of acting as templates in polymerization reactions)
RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 19 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **2000:384565** HCAPLUS
DN **133:28236**

ED Entered STN: 09 Jun 2000
TI Methods and compositions for performing an array of chemical reactions on a support surface
IN Zebala, John A.
PA Syntrix Biochip, Inc., USA
SO PCT Int. Appl., 157 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM G01N033-68
CC **9-1 (Biochemical Methods)**
Section cross-reference(s): 1, **3**, 26, 33, 80
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2000033084	A2	20000608	WO 1999-US28021	19991123	<--
	WO 2000033084	A3	20000810			
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	AU 2000018317	A5	20000619	AU 2000-18317	19991123	<--
	EP 1163374	A2	20011219	EP 1999-961813	19991123	<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
	JP 2002531470	T2	20020924	JP 2000-585669	19991123	<--
PRAI	US 1998-110527P	P	19981201	<--		
	US 1999-326479	A	19990604	<--		
	WO 1999-US28021	W	19991123	<--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000033084	ICM	G01N033-68
WO 2000033084	ECLA	B01J019/00C; C12Q001/68A6; C12Q001/68B14; G03F007/00R; C07B061/00L; C07H021/00F; C07K001/04C; C07K014/00B1 <--

AB Compns. and methods are provided for performing regionally selective solid-phase chemical synthesis of organic compds. Such methods may employ solvent-resistant photoresist compns. to prepare arrays of organic compds., such as ligands, for use within a variety of diagnostic and drug discovery assays. Ligand-arrays may comprise, for example, nucleobase polymers that are resistant to degradative enzymes. DNA probes and enalaprilat analogs were synthesized on glass slides using a photoresist method and used in hybridization assays and ACE inhibitory activity screening.
ST support array chem reaction photoresist; ligand array; DNA hybridization immobilized probe; ACE inhibitor screening enalaprilat analog solid phase synthesis; nucleic acid array
IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(BRCA1, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)
IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(BRCA2, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(CFTR, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Nucleic acid hybridization
(DNA-DNA; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Gene, animal
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(TP53, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Silanes
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(alkoxy, as linkers; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Leukocyte
(antigen of, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Polyamides, preparation
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(as photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Glass, reactions
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(as substrate; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Acid halides
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(chlorides, diacid, condensates with diamines, as photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Cell
Cell membrane
Organelle
(compds. binding to, identification of; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Antibodies
Enzymes, uses
RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(compds. binding to, identification of; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Agglutinins and Lectins
Carbohydrates, uses
Polysaccharides, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical

process); PROC (Process); USES (Uses)
(compds. binding to, identification of; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Phenolic resins, uses
RL: NUU (Other use, unclassified); USES (Uses)
(compds., in photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Amines, preparation
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(diamines, condensates with phenylenediamine and diacid chloride mixture, as photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Quinones
RL: NUU (Other use, unclassified); USES (Uses)
(diazo-, in photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Metal alkoxides
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(hydrolyzed, polymers of, on surface; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Polymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(in photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Receptors
RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical process); RCT (Reactant); ANST (Analytical study); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(ligand analogs binding to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Acids, uses
RL: NUU (Other use, unclassified); USES (Uses)
(linkers cleavable by; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Coating materials
(masking; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Adhesives
Analysis
Chromatography
DNA sequence analysis
Diagnosis
Drug screening
Electrophoresis
Human immunodeficiency virus
Indicators
Mass spectrometry
NMR spectroscopy
Negative photoresists
Nucleic acid hybridization
PCR (polymerase chain reaction)
Photoresists
Positive photoresists
Protein sequence analysis
RNA sequence analysis
Radiation

Reactors
Solvents
Surface
Synthesis
(methods and compns. for performing arrays of chemical **reactions** on support surfaces using photoresists)

IT Probes (nucleic acid)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Ligands
RL: ARG (Analytical reagent use); DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); ANST (Analytical study); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Peptide nucleic acids
RL: ARG (Analytical reagent use); DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Nucleic acids
Polynucleotides
Proteins, general, reactions
Reagents
RL: ARG (Analytical reagent use); DEV (Device component use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Antisense oligonucleotides
Organic compounds, reactions
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Adsorption
(mols. attachment to surface by; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Peptides, reactions
RL: ARG (Analytical reagent use); DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); ANST (Analytical study); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(nucleic acid mimics; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Antigens
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(of leukocyte, of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Particles
(of metal oxide, gelled network of, on surface; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Genetic polymorphism

(of single nucleotide of human, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Oxides (inorganic), reactions
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(particles, gelled network of, on surface; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Materials
(photoactive chems., as linkers; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT Microscopes
(slides; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 51-20-7, 5-Bromouracil 51-21-8, 5-Fluorouracil 58-63-9, Inosine 65-71-4, Thymine 66-22-8, Uracil, uses 66-22-8D, Uracil, pseudo-, derivs., uses 68-94-0, Hypoxanthine 69-89-6, Xanthine 71-30-7, Cytosine 73-24-5, Adenine, uses 73-40-5, Guanine 141-90-2, Thiouracil 333-49-3, 2-Thiocytosine 443-72-1 504-07-4, Dihydrouracil 554-01-8, 5-Methylcytosine 578-76-7, 7-Methylguanine 591-28-6, 4-Thiouracil 636-26-0, 5-Methyl-2-thiouracil 696-07-1, 5-Iodouracil 938-85-2, 1-Methylguanine 1445-08-5, 2-Methyladenine 1445-15-4 1500-85-2, 7-Deazaadenine 1820-81-1, 5-Chlorouracil 1904-98-9, 2,6-Diaminopurine 2140-73-0, 1-Methylinosine 2365-40-4, N6-Isopentenyladenine 4776-08-3, 3-Methylcytosine 5142-22-3, 1-Methyladenine 6623-81-0, 5-Methoxyuracil 7355-55-7, 7-Deazaguanine 10030-78-1 14631-20-0 14886-75-0 20758-33-2 31458-37-4 72704-66-6 273752-46-8 273752-47-9 273752-48-0 273752-50-4 273752-52-6
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(array of nucleobase polymers containing; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 82601-53-4, AZ 351
RL: NUU (Other use, unclassified); USES (Uses)
(as developer; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 76390-92-6P 273752-64-0P 273752-65-1P 273752-66-2P 273752-67-3P 273752-68-4P 273752-69-5P 273752-70-8P 273935-21-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(as enalaprilat analog, ACE inhibitory activity of; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 64967-39-1
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(as indicator with angiotensin converting enzyme; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 101268-32-0 134978-97-5
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(as linkers; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 273752-54-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(as photoactive polyamide; methods and compns. for performing arrays of

chemical reactions on support surfaces using photoresists)

IT 99-63-8DP, Isophthaloyl chloride, mixture with diacid chloride, condensates with diamines 100-20-9DP, Terephthaloyl chloride, mixture with isophthaloyl chloride, condensates with diamines 106-50-3DP, 1,4-Phenylenediamine, condensates with diamine and diacid chloride mixture 108-45-2DP, 1,3-Phenylenediamine, condensates with diamine and diacid chloride mixture 2784-96-5DP, condensates with phenylenediamine and diacid chloride mixture 81871-61-6DP, condensates with phenylenediamine and diacid chloride mixture
RL: NUU (Other use, unclassified); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(as photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 126039-24-5, AZ 1512
RL: NUU (Other use, unclassified); USES (Uses)
(as pos. photoresist; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 9015-82-1, Angiotensin-converting enzyme
RL: CAT (Catalyst use); DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(compds. binding to, identification of; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 76-05-1, Trifluoroacetic acid, uses 7664-41-7, Ammonia, uses
RL: NUU (Other use, unclassified); USES (Uses)
(for detachment of compds.; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 9001-24-5, Blood-coagulation factor V
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(human gene for, probe complementary to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 9003-35-4D, compds.
RL: NUU (Other use, unclassified); USES (Uses)
(in photoresists; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 156-06-9, Phenylpyruvic acid 328-50-7, 2-Ketoglutaric acid 5461-32-5, 2-Nitrophenylpyruvic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of enalaprilat analog on solid phase; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 76420-72-9D, Enalaprilat, analogs
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 78-10-4D, Tetraethoxysilane, hydrolyzed, on surface
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT **68-12-2**, Dimethylformamide, uses **127-19-5**, Dimethylacetamide **872-50-4**, N-Methylpyrrolidone, uses
RL: NUU (Other use, unclassified); USES (Uses)

(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 78-10-4, Tetraethoxysilane 919-30-2 166108-71-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

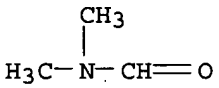
IT 9001-92-7, Protease
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(organic compds. resistant to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT 9026-81-7, Nuclease
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(polynucleotides resistant to; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

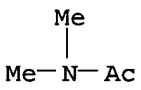
IT 273752-55-9DP, immobilized 273752-56-0DP, immobilized 273752-57-1DP, immobilized 273752-58-2DP, immobilized 273752-59-3DP, immobilized 273752-60-6DP, immobilized 273752-61-7DP, immobilized 273752-62-8DP, immobilized 273752-63-9DP, immobilized
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(preparation and detachment of; methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

IT **68-12-2**, Dimethylformamide, uses **127-19-5**, Dimethylacetamide **872-50-4**, N-Methylpyrrolidone, uses
RL: NUU (Other use, unclassified); USES (Uses)
(methods and compns. for performing arrays of chemical reactions on support surfaces using photoresists)

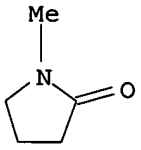
RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 127-19-5 HCAPLUS
CN Acetamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 872-50-4 HCAPLUS
CN 2-Pyrrolidinone, 1-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 20 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **1999:311124** HCAPLUS
DN **130:335003**
ED Entered STN: 21 May 1999
TI Method for high resolution liquid chromatographic separation of polynucleotides
IN Gjerde, Douglas T.; Taylor, Paul D.; Haefele, Robert M.
PA Transgenomic, Inc., USA
SO PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM B01D015-08
ICS C01H021-00
CC **9-3 (Biochemical Methods)**
Section cross-reference(s): 33
FAN.CNT 34

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PI	WO 9922839	A1	19990514	WO 1998-US23159	19981030 <--
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	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
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	AU 751737	B2	20020829		
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	EP 1056528	A1	20001206	EP 1998-956414	19981030 <--
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	US 6355165	B1	20020312	US 2000-580302	20000526 <--
	US 6461819	B1	20021008	US 2000-643120	20000821 <--
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	US 6488855	B2	20021203		
	US 2001047961	A1	20011206	US 2001-828346	20010405 <--
	US 6491821	B2	20021012		
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	US 6503397	B2	20030107		
	US 2001032817	A1	20011025	US 2001-848385	20010502 <--
	US 6521123	B2	20030218		
	US 2002038786	A1	20020404	US 2001-848386	20010502 <--
	US 6524480	B2	20030225		
	US 2002169309	A1	20021114	US 2001-912608	20010724 <--
	US 2002158017	A1	20021031	US 2002-54214	20020121 <--
	US 2004034211	A1	20040219	US 2002-97397	20020313 <--
	US 2002197629	A1	20021226	US 2002-121552	20020412 <--
	US 2003144500	A1	20030731	US 2002-157695	20020528 <--
	US 2003102260	A1	20030605	US 2002-293625	20021112 <--
	US 2003165941	A1	20030904	US 2002-308576	20021202 <--
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	US 1998-70467P	P	19980105 <--		

US 1998-58337	A	19980410	<--
US 1998-58580	A	19980410	<--
US 1998-129105	A	19980804	<--
US 1998-103313P	P	19981006	<--
US 1997-49123P	P	19970610	<--
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US 1997-56012P	P	19970818	<--
US 1997-56500P	P	19970820	<--
US 1997-61445P	P	19971009	<--
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US 1997-62413P	P	19971014	<--
US 1997-62690P	P	19971022	<--
US 1997-63835P	P	19971030	<--
US 1997-67269P	P	19971203	<--
US 1997-67679P	P	19971205	<--
US 1997-69313P	P	19971205	<--
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US 1998-85840P	P	19980518	<--
US 1998-89606P	P	19980617	<--
US 1998-89675P	P	19980617	<--
US 1998-93844P	P	19980722	<--
US 1998-136084	A2	19980818	<--
US 1998-99825P	P	19980910	<--
US 1998-172920	A1	19981014	<--
US 1998-183047	A3	19981030	<--
US 1998-183123	A1	19981030	<--
US 1998-183450	A1	19981030	<--
WO 1998-US23159	W	19981030	<--
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US 1999-117211P	P	19990125	<--
US 1999-119936P	P	19990212	<--
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US 1999-129838P	P	19990416	<--
US 1999-295474	A3	19990419	<--
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US 1999-318407	A3	19990525	<--
US 1999-350774	A1	19990709	<--
US 1999-399472	A1	19990920	<--
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US 1999-469551	B1	19991222	<--
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US 2000-493779	A3	20000128	<--
US 2000-698942	A1	20001026	<--
US 2001-828315	A1	20010405	
US 2001-912608	B1	20010724	

CLASS

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US 6287822	NCL	435/091.200; 210/198.200; 210/635.000; 435/006.000; 536/022.100; 536/025.400	
	ECLA	C12Q001/68A4+565/137; C12Q001/68B6+565/137+527/107	<--
US 6024878	NCL	210/635.000; 210/656.000; 435/006.000; 536/025.400	<--
US 6342161	NCL	210/635.000; 210/656.000; 435/006.000; 536/025.400	<--

US 6309549	NCL	210/635.000; 210/198.200; 210/656.000; 435/006.000; 536/025.400	<--
US 6355165	NCL	210/198.200; 210/175.000; 210/656.000	
	ECLA	B01D015/16B; B01D015/20; B01D015/36P; G01N030/30; G01N030/54; G01N030/96	<--
US 6461819	NCL	435/006.000; 422/050.000; 422/068.100	<--
US 2001023848	NCL	210/635.000; 210/198.200; 210/656.000; 435/006.000; 536/025.400	<--
US 2001047961	NCL	210/635.000; 210/198.200; 210/656.000; 435/006.000; 536/025.400	<--
US 2002003109	NCL	210/635.000; 210/198.200; 210/656.000; 210/659.000; 435/006.000; 536/025.400	<--
US 2001032817	NCL	210/198.200; 210/502.100; 210/635.000; 210/656.000; 435/006.000; 536/025.400	<--
US 2002038786	NCL	210/635.000; 210/198.200; 210/656.000; 435/006.000; 536/025.400	<--
US 2002169309	NCL	536/025.400; 435/006.000; 210/656.000	
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US 2002158017	NCL	210/635.000; 210/656.000; 435/006.000; 536/025.400	<--
US 2004034211	NCL	536/025.400; 435/006.000	
	ECLA	C12N015/10A2B; C12Q001/68B6+565/137+527/107; C12Q001/68B6	<--
US 2002197629	NCL	435/006.000; 536/025.400	<--
US 2003144500	NCL	536/025.400; 435/006.000	
	ECLA	C12N015/10A2B; C12Q001/68B6+565/137+527/107; C12Q001/68B6; C12Q001/68B10	<--
US 2003102260	NCL	210/635.000; 210/656.000; 210/198.200; 435/006.000; 536/025.400	<--
US 2003165941	NCL	435/006.000; 702/020.000	
	ECLA	B01D015/36P; C12N015/10A2B; C12Q001/68B6+565/137+527/107; C12Q001/68B6; C12Q001/68E+565/137+527/107	<--

AB Mixts. of dsDNA fragments are separated by Matched Ion Polynucleotide Chromatog. (MIPC) using an isocratic mobile phase to elute polynucleic acid from an MIPC column. The use of isocratic elution conditions provides a marked improvement in the separation of dsDNA fragments compared to gradient elution conditions. Isocratic elution can also be used to effect an improved separation of heteroduplex and homoduplex mixts. when the chromatog. is performed under partially denaturing conditions. In addition, dsDNA fragments are bound to the stationary phase under isocratic conditions until a solvent concentration is reached which releases fragments of a particular base pair length range. This separation process is different from the equilibrium partitioning process observed under gradient elution conditions.

ST high resoln liq chromatog sepn polynucleotide

IT Liquid chromatography
(Matched Ion Polynucleotide Chromatog.; method for high resolution liquid chromatog. separation of polynucleotides)

IT DNA
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(double-stranded, fragments; method for high resolution liquid chromatog. separation of polynucleotides)

IT Polysaccharides, uses
RL: NUU (Other use, unclassified); USES (Uses)
(insol.; method for high resolution liquid chromatog. separation of polynucleotides)

IT Quaternary ammonium compounds, uses

RL: NUU (Other use, unclassified); USES (Uses)
(lower alkyl trialkyl; method for high resolution liquid chromatog. separation of polynucleotides)
IT Anions
Counterions
PCR (polymerase chain reaction)
Particles
(method for high resolution liquid chromatog. separation of polynucleotides)
IT Polynucleotides
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(method for high resolution liquid chromatog. separation of polynucleotides)
IT Diatomite
Esters, uses
Ethers, uses
Hydrocarbons, uses
Nitriles, uses
Polymers, uses
Quaternary ammonium compounds, uses
RL: NUU (Other use, unclassified); USES (Uses)
(method for high resolution liquid chromatog. separation of polynucleotides)
IT Cations
(multivalent; method for high resolution liquid chromatog. separation of polynucleotides)
IT Solvents
(organic; method for high resolution liquid chromatog. separation of polynucleotides)
IT Nucleic acids
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(poly-; method for high resolution liquid chromatog. separation of polynucleotides)
IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(primary, lower alkyl; method for high resolution liquid chromatog. separation of polynucleotides)
IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(secondary, lower alkyl; method for high resolution liquid chromatog. separation of polynucleotides)
IT Amines, uses
RL: NUU (Other use, unclassified); USES (Uses)
(tertiary, lower alkyl; method for high resolution liquid chromatog. separation of polynucleotides)
IT 23377-49-3
RL: ANT (Analyte); ANST (Analytical study)
(method for high resolution liquid chromatog. separation of polynucleotides)
IT 64-17-5, Ethanol, uses **68-12-2**, Dimethylformamide, uses
71-47-6, Formate, uses 71-50-1, uses 72-03-7, Propionate, uses
109-99-9, Tetrahydrofuran, uses 409-21-2, Silicon carbide (SiC), uses
1185-59-7, Tetraethylammonium acetate 1314-23-4, Zirconium oxide, uses
1344-28-1, Aluminum oxide, uses 2016-38-8, Decylammonium acetate
2016-40-2, Octylammonium acetate 2190-04-7, Octadecylammonium acetate
3812-32-6, Carbonate, uses 5204-74-0, Triethylammonium acetate
7204-64-0, Tributylammonium acetate 7346-79-4 7440-44-0, Carbon, uses
7631-86-9, Silica, uses 10534-59-5, Tetrabutylammonium acetate

10581-12-1, Tetramethylammonium acetate 13463-67-7, Titanium oxide, uses 14265-44-2, Phosphate, uses 14797-55-8, Nitrate, uses 14808-79-8, Sulfate, uses 16887-00-6, Chloride, uses 20726-63-0, Diethylammonium acetate 24608-93-3 24959-67-9, Bromide, uses 27593-14-2 56285-72-4 67846-20-2, Tripropylammonium acetate 69576-93-8, Tetrapropylammonium acetate 173474-19-6 205490-75-1 224047-27-2 224047-28-3 224047-29-4
RL: NUU (Other use, unclassified); USES (Uses)
(method for high resolution liquid chromatog. separation of polynucleotides)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

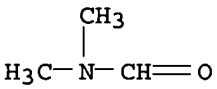
RE

(1) Bishop; US 5612456 1997 HCAPLUS
(2) Bonn; US 5585236 1996
(3) Carr; US 5205929 1993 HCAPLUS
(4) Lin; US 5207914 1993 HCAPLUS
(5) Oefner; US 5795976 1998 HCAPLUS
(6) Oefner; Am J Human Genet 1995, V57, PA66
(7) Shaltiel; US 3917527 1975 HCAPLUS
(8) Snyder; Introduction to Modern Liquid Chromatography Second Edition 1979, P186

IT **68-12-2**, Dimethylformamide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(method for high resolution liquid chromatog. separation of polynucleotides)

RN 68-12-2 HCAPLUS

CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 21 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

AN **1998:719308** HCAPLUS

DN **130:1996**

ED Entered STN: 12 Nov 1998

TI Improved liquid chromatographic media for polynucleotide separation

IN Gjerde, Douglas T.; Taylor, Paul D.

PA Transgenomic, Inc., USA

SO PCT Int. Appl., 59 pp.
CODEN: PIXXD2

DT **Patent**

LA English

IC ICM B01D015-08
ICS C07H021-00; C07H021-02; C07H021-04

CC **9-3 (Biochemical Methods)**

FAN.CNT 34

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9848914	A1	19981105	WO 1998-US8293	19980424 <--
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US 6524480	B2	20030225			
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US 1997-62303P	P	19971017	<--	
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US 1998-77998P	P	19980313	<--	
US 1998-58337	A	19980410	<--	
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US 1997-63835P	P	19971030	<--	
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US 1998-70467P	P	19980105	<--	
US 1998-78523P	P	19980318	<--	
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WO 1998-US8293	W	19980424	<--	
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US 1998-99825P	P	19980910	<--	
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US 1999-119936P	P	19990212	<--	
US 1999-295474	A3	19990419	<--	
US 1999-350774	A1	19990709	<--	
US 1999-399472	A1	19990920	<--	
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CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
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US 6355165	NCL	210/198.200; 210/175.000; 210/656.000	
	ECLA	B01D015/16B; B01D015/20; B01D015/36P; G01N030/30; G01N030/54; G01N030/96	<--
US 2001023848	NCL	210/635.000; 210/198.200; 210/656.000; 435/006.000; 536/025.400	<--
US 2001047961	NCL	210/635.000; 210/198.200; 210/656.000; 435/006.000; 536/025.400	<--
US 2002003109	NCL	210/635.000; 210/198.200; 210/656.000; 210/659.000; 435/006.000; 536/025.400	<--
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536/025.400 <--
US 2003102260 NCL 210/635.000; 210/656.000; 210/198.200; 435/006.000;
536/025.400 <--

AB Nonporous beads having an average diameter of about 0.5-100 μ are suitable for chromatog. separation of mixts. of polynucleotides when the beads comprise a nonporous particle which are coated with a polymer or which have substantially all surface substrate groups end-capped with a non-polar hydrocarbon or substituted hydrocarbon group. The beads provide efficient separation of polynucleotides using matched ion polynucleotide chromatog. Thus, DNA fragments were separated by using octadecyldimethylsilane-modified silica.

ST liq chromatog polynucleotide sepn; HPLC polynucleotide sepn silica polymer

IT HPLC
Liquid chromatography
PCR (polymerase chain reaction)
(liquid chromatog. media for polynucleotide separation)

IT DNA
Polynucleotides
RNA
RL: ANT (Analyte); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT Alcohols, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT Diatomite
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT Esters, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT Ethers, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT Nitriles, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT Polyamides, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT Polymers, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

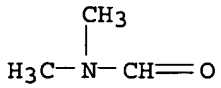
IT Polysaccharides, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT Polysiloxanes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT Polyurethanes, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)

IT **68-12-2**, DMF, analysis 79-41-4D, Methacrylic acid, esters, polymers 409-21-2, Silicon carbide, analysis 1314-23-4, Zirconium oxide, analysis 1344-28-1, Alumina, analysis 5204-74-0, Triethylammonium acetate 7440-44-0, Carbon, analysis 7631-86-9, Silica, analysis 9002-88-4 9003-07-0 9003-53-6 9003-70-7, Divinylbenzene-styrene copolymer 9004-34-6, Cellulose, analysis 9016-00-6, Poly(Dimethyl siloxane) 13463-67-7, Titanium oxide, analysis 31900-57-9, Poly(Dimethyl siloxane) 45189-55-7 56285-72-4
RL: ARU (Analytical role, unclassified); ANST (Analytical study)

(liquid chromatog. media for polynucleotide separation)
IT 75-77-4, Trimethylchlorosilane, reactions 75-94-5, Vinyltrichlorosilane
1190-16-5, 3-Cyanopropylmethyldichlorosilane 18416-07-4,
DiOctyldichlorosilane 18643-08-8 215662-31-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(liquid chromatog. media for polynucleotide separation)
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bonn; US 5585236 A 1996
(2) Huber; Analytical Biochemistry 1993, V212, P351 HCAPLUS
(3) Maa; Journal of Chromatography 1990, V508, P61 HCAPLUS
IT **68-12-2**, DMF, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(liquid chromatog. media for polynucleotide separation)
RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 22 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **1998:719307** HCAPLUS
DN **130:1995**
ED Entered STN: 12 Nov 1998
TI Polynucleotide separations on nonporous polymer beads
IN Gjerde, Douglas T.; Haefele, Robert M.; Taylor, Paul D.
PA Transgenomic, Inc., USA
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM B01D015-00
ICS B01D015-08; C12Q001-68; C08F112-08; C07H019-00
CC **9-3 (Biochemical Methods)**
FAN.CNT 34

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9848913	A1	19981105	WO 1998-US8388	19980423 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2286350	AA	19981105	CA 1998-2286350	19980423 <--
CA 2286350	C	20050222		
AU 9871620	A1	19981124	AU 1998-71620	19980423 <--
AU 740718	B2	20011115		
EP 1017466	A1	20000712	EP 1998-918755	19980423 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002506426	T2	20020226	JP 1998-547222	19980423 <--
US 6342161	B1	20020129	US 2000-481476	20000111 <--
US 6309549	B1	20011030	US 2000-493779	20000128 <--

US 6355165	B1	20020312	US 2000-580302	20000526	<--
US 2001032817	A1	20011025	US 2001-848385	20010502	<--
US 6521123	B2	20030218			
PRAI US 1997-44856P	P	19970425	<--		
US 1997-59636P	P	19970923	<--		
US 1997-62321P	P	19971017	<--		
US 1997-63628P	P	19971027	<--		
US 1997-67679P	P	19971205	<--		
US 1998-77875P	A	19980313	<--		
US 1998-58580	A	19980410	<--		
US 1997-64428P	P	19971030	<--		
US 1998-70467P	P	19980105	<--		
US 1998-58337	B2	19980410	<--		
WO 1998-US8388	W	19980423	<--		
US 1998-89675P	P	19980617	<--		
US 1998-129105	A2	19980804	<--		
US 1998-99825P	P	19980910	<--		
US 1998-103313P	P	19981006	<--		
US 1998-183047	A3	19981030	<--		
US 1998-183123	A1	19981030	<--		
US 1999-119936P	P	19990212	<--		
US 1999-295474	A3	19990419	<--		
US 2000-493779	A3	20000128	<--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
WO 9848913	ICM	B01D015-00	
	ICS	B01D015-08; C12Q001-68; C08F112-08; C07H019-00	
WO 9848913	ECLA	B01D015/08; B01J020/26; B01J020/32; C12N015/10A2B; C12Q001/68A4	<--
US 6342161	NCL	210/635.000; 210/656.000; 435/006.000; 536/025.400	<--
US 6309549	NCL	210/635.000; 210/198.200; 210/656.000; 435/006.000; 536/025.400	<--
US 6355165	NCL	210/198.200; 210/175.000; 210/656.000	
	ECLA	B01D015/16B; B01D015/20; B01D015/36P; G01N030/30; G01N030/54; G01N030/96	<--
US 2001032817	NCL	210/198.200; 210/502.100; 210/635.000; 210/656.000; 435/006.000; 536/025.400	<--

AB The present invention describes a chromatog. method for separating polynucleotides with improved separation and efficiency. The method uses nonporous polymeric beads having a non-reactive, non-polar surface, and made from a variety of different polymerizable monomers.

ST polynucleotide sepn nonporous polymer bead

IT Washing
(acid; polynucleotide sepns. on nonporous polymer beads)

IT Functional groups
(bromo; polynucleotide sepns. on nonporous polymer beads)

IT Cations
(multivalent; polynucleotide sepns. on nonporous polymer beads)

IT Polymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(nonporous, beads; polynucleotide sepns. on nonporous polymer beads)

IT Solvents
(organic; polynucleotide sepns. on nonporous polymer beads)

IT Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polymers; polynucleotide sepns. on nonporous polymer beads)

IT Chromatography
Cyano group
Hydroxyl group

Nitro group
PCR (polymerase chain reaction)
Solvents
(polynucleotide sepns. on nonporous polymer beads)

IT Alcohols, uses
Aldehydes, uses
Aromatic compounds
Hydrocarbons, uses
Nitriles, uses
Polyamides, uses
Polycarbonates, uses
Polyesters, uses
Polyolefins
Polyurethanes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polynucleotide sepns. on nonporous polymer beads)

IT DNA
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(polynucleotide sepns. on nonporous polymer beads)

IT Polynucleotides
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(polynucleotide sepns. on nonporous polymer beads)

IT RNA
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(polynucleotide sepns. on nonporous polymer beads)

IT Alcohols, uses
RL: NUU (Other use, unclassified); USES (Uses)
(triethylammonium hexafluoroisopropyl; polynucleotide sepns. on nonporous polymer beads)

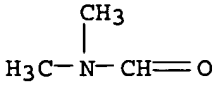
IT 64-19-7D, Acetic acid, trialkylamine, analysis 74-85-1D, Ethylene, fluorosubstituted 100-42-5, analysis 463-79-6D, Carbonic acid, trialkylamines, analysis
RL: ANT (Analyte); ANST (Analytical study)
(polynucleotide sepns. on nonporous polymer beads)

IT **68-12-2**, Dimethylformamide, uses 98-83-9, uses 98-83-9D, α-Methylstyrene, Alkyl substituted 100-42-5D, Styrene, Alkyl substituted 100-42-5D, Vinylbenzene, C1-6 alkyl 100-42-5D, Styrene, copolymers 106-99-0, 1,3-Butadiene, uses 1321-74-0, Divinylbenzene, uses 5204-74-0, Triethylammonium acetate 7664-38-2D, Phosphoric acid, trialkylamines, uses 7732-18-5, Water, uses 9002-89-5, Polyvinyl alcohol 9003-70-7, Poly(styrene-divinylbenzene) 10344-93-1D, Acrylate, compds., uses 18358-13-9D, Methacrylate, compds., uses
RL: NUU (Other use, unclassified); USES (Uses)
(polynucleotide sepns. on nonporous polymer beads)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bonn; US 5585236 A 1996
(2) Huber; Analytical Biochemistry 1993, V212, P351 HCAPLUS

IT **68-12-2**, Dimethylformamide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polynucleotide sepns. on nonporous polymer beads)

RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 23 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **1997:18353** HCAPLUS
DN **126:43599**
ED Entered STN: 13 Jan 1997
TI Buffer and method for evaluating optimal nucleic acid target sequence amplification conditions and applications thereof
IN Fouque, Brigitte; Teoule, Robert
PA Cis Bio International, Fr.; Fouque, Brigitte; Teoule, Robert
SO PCT Int. Appl., 65 pp.
CODEN: PIXXD2
DT **Patent**
LA French
IC ICM C12Q001-68
CC **3-1 (Biochemical Genetics)**
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9634115	A1	19961031	WO 1996-FR642	19960426 <--
W: JP, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
FR 2733515	A1	19961031	FR 1995-5053	19950427 <--
FR 2733515	B1	19970905		
PRAI FR 1995-5053	A	19950427 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9634115	ICM	C12Q001-68
FR 2733515	ECLA	C12Q001/68D4; C12Q001/68D6 <--

AB A buffer for facilitating nucleic acid denaturation while maintaining the structure of the enzymes used, and for significantly improving the performance of the **polymerase chain reaction** is described, as well as applications thereof, particularly in a method for amplifying nucleic acid target sequences using several temps. and in a method for evaluating optimal conditions to be implemented in said amplification method. The buffer comprises, in addition to standard amplification buffer components, a mixture of at least one isodestabilizing agent (I) and at least one denaturing agent (D), in concns. capable of reducing the m.p. (Tm) of the double-stranded nucleic acid target sequence, according to the formula: $Tm(°C)=81.5 + 0.41(\%G+C) - \Delta TmI - 675/N+16.6\log M - \Delta TmD$, wherein $\Delta TmI = f[(\%G+C),(\text{molarity of I})]$, $\Delta TmD = d(\%\text{ denaturing agent})$, M = molarity of one or more monovalent cations present in the buffer, N = number of nucleotides, and d = efficiency coefficient of denaturing agent (D) for reducing at least the denaturation temperature (Td) of said double-stranded nucleic acid target sequence, while allowing for the proper performance of the primer extension enzyme **reaction.** Isodestabilizing agents which can be used include alkylammonium halides, zwitterions, and trialkylamine N-oxides. N,N,N-trimethylglycine is preferred. Useful denaturing agents include glycerol, DMSO, DMF, formamide, ureas, polyols, and detergents. Particularly preferred for amplification buffers are the combinations N,N,N-trimethylglycine and DMSO, or N,N,N-trimethylglycine and DMSO and glycerol. Determination of optimal **PCR** conditions in the presence of such agents and the effects of these agents in **PCR** buffers were demonstrated.

ST nucleic acid amplification trimethylglycine DMSO glycerol; **PCR** LCR buffer trimethylglycine DMSO glycerol

IT **Nucleic acid amplification (method)**
(**DNA**, ligase chain reaction; isodestabilizing and denaturing agents-containing buffer and method for evaluating optimal nucleic acid

target sequence amplification conditions and applications thereof)

IT Denaturants
Nucleic acid amplification (method)
PCR (polymerase chain reaction)
(isodestabilizing and denaturing agents-containing buffer and method for evaluating optimal nucleic acid target sequence amplification conditions and applications thereof)

IT Detergents
Zwitterions
RL: NUU (Other use, unclassified); USES (Uses)
(isodestabilizing and denaturing agents-containing buffer and method for evaluating optimal nucleic acid target sequence amplification conditions and applications thereof)

IT Alcohols, uses
RL: NUU (Other use, unclassified); USES (Uses)
(polyhydric; isodestabilizing and denaturing agents-containing buffer and method for evaluating optimal nucleic acid target sequence amplification conditions and applications thereof)

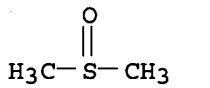
IT Amine oxides
Amine oxides
RL: NUU (Other use, unclassified); USES (Uses)
(tertiary; isodestabilizing and denaturing agents-containing buffer and method for evaluating optimal nucleic acid target sequence amplification conditions and applications thereof)

IT Quaternary ammonium compounds, uses
RL: NUU (Other use, unclassified); USES (Uses)
(tetraalkyl, halides; isodestabilizing and denaturing agents-containing buffer and method for evaluating optimal nucleic acid target sequence amplification conditions and applications thereof)

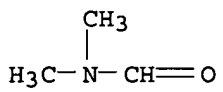
IT 56-81-5, 1,2,3-Propanetriol, uses 57-13-6, Urea, uses **67-68-5**, uses **68-12-2**, uses 75-12-7, Formamide, uses 107-43-7
RL: NUU (Other use, unclassified); USES (Uses)
(isodestabilizing and denaturing agents-containing buffer and method for evaluating optimal nucleic acid target sequence amplification conditions and applications thereof)

IT **67-68-5**, uses **68-12-2**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(isodestabilizing and denaturing agents-containing buffer and method for evaluating optimal nucleic acid target sequence amplification conditions and applications thereof)

RN 67-68-5 HCAPLUS
CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)



RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



L141 ANSWER 24 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

AN **1996:284836** HCAPLUS
DN **124:334845**
ED Entered STN: 14 May 1996
TI Biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction
IN Petrik, Juraj; Allain, Jean-Pierre; Pearson, Gavin John Mark
PA Lynxvale Ltd., UK
SO PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM C12Q001-68
ICS C12Q001-70
CC **3-1** (**Biochemical Genetics**)
Section cross-reference(s): **9**, 10, 14
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9603528	A2	19960208	WO 1995-GB1768	19950726 <--
WO 9603528	A3	19960418		

W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

AU 9531183	A1	19960222	AU 1995-31183	19950726 <--
EP 775216	A2	19970528	EP 1995-927015	19950726 <--
EP 775216	B1	20020403		

R: DE, FR, GB

PRAI GB 1994-15129	A	19940727 <--
WO 1995-GB1768	W	19950726 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9603528	ICM	C12Q001-68
	ICS	C12Q001-70
WO 9603528	ECLA	B01L003/00C2D; C12Q001/68A4; C12Q001/70B; C12Q001/70B6A; C12Q001/70B2B <--

AB Oligonucleotide probes for HCV, HIV 1 and HIV 2, and HTLV I and II RNA detection in blood samples and for virus RNA extraction Use of DNA cutting enzyme, annealing with labeled primer, multi-well plates, and DMSO or DMF for elution is also included.
ST oligonucleotide labeled virus HCV HIV HTLV; RNA viral extn HCV HIV HTLV; blood diagnosis HCV HIV HTLV virus
IT Blood analysis
Polymerase chain reaction
(biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)
IT Ribonucleic acids, viral
RL: ANT (Analyte); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)
IT Annealing

(with labeled primer; biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT Virus, animal
(hepatitis C, biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT Virus, animal
(human T-cell leukemia type I, biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT Virus, animal
(human T-cell leukemia type II, biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT Virus, animal
(human immunodeficiency 1, biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT Virus, animal
(human immunodeficiency 2, biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT Nucleotides, biological studies
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(oligo-, labeled, biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT 176304-89-5DP, biotinylated derivs. 176304-90-8DP, fluorescein-labeled derivs.
RL: ANT (Analyte); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**PCR** primer; biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT 58-85-5D, Biotin, oligonucleotide conjugates 2321-07-5D, Fluorescein, oligonucleotide conjugates
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT **9003-98-9, DNase**
RL: NUU (Other use, unclassified); USES (Uses)
(biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT 176304-91-9P
RL: ANT (Analyte); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(dA40, probe for HCV virus; biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT **67-68-5**, DMSO, uses **68-12-2**, DMF, uses
RL: NUU (Other use, unclassified); USES (Uses)

(elution; biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT 55508-40-2P
RL: ANT (Analyte); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(probe for HCV virus; biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT 127712-01-0P
RL: ANT (Analyte); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(probe for HIV 1 and HIV 2; biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT 127711-91-5P
RL: ANT (Analyte); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(probe for HTLV I and HTLV II; biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

IT 24937-83-5, Poly(A)
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(probe for hepatitis C virus; biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

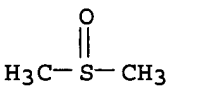
IT **9003-98-9, DNase**
RL: NUU (Other use, unclassified); USES (Uses)
(biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

RN 9003-98-9 HCAPLUS
CN Nuclease, deoxyribo- (9CI) (CA INDEX NAME)

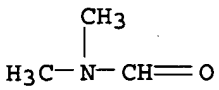
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **67-68-5**, DMSO, uses **68-12-2**, DMF, uses
RL: NUU (Other use, unclassified); USES (Uses)
(elution; biotinylated and fluorescein-labeled oligonucleotide probes and primers for HCV, HIV, and HTLV detection in blood samples or for virus RNA extraction)

RN 67-68-5 HCAPLUS
CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)



RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



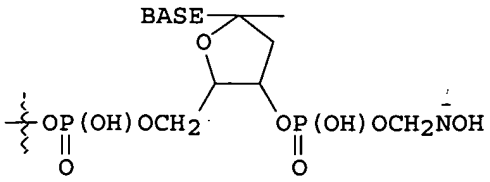
L141 ANSWER 25 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **1994:263055** HCAPLUS
DN **120:263055**
ED Entered STN: 28 May 1994
TI Nucleic acid sequence amplification without temperature cycling
IN Mcdonough, Sherrol H.; Kacian, Daniel L.; Dattagupta, Nanibhushan; Mcallister, Diane L.; Hammond, Philip W.; Ryder, Thomas B.
PA Gen-Probe Incorp., USA
SO PCT Int. Appl., 48 pp.
CODEN: PIXXD2
DT **Patent**
LA English
IC ICM C07H021-04
ICS C12P019-34; C12Q001-68
CC **3-1 (Biochemical Genetics)**
FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9403472	A1	19940217	WO 1993-US7138	19930728	<--
	W: AU, CA, JP, KR, NO					
	JP 07509368	T2	19951019	JP 1994-505433	19930728	<--
	AU 670116	B2	19960704	AU 1993-47920	19930728	<--
	AU 9347920	A1	19940303			
	EP 587298	A2	19940316	EP 1993-306169	19930804	<--
	EP 587298	B1	20001108			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE					
	EP 978570	A2	20000209	EP 1999-121906	19930804	<--
	EP 978570	A3	20000412			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE					
	AT 197479	E	20001111	AT 1993-306169	19930804	<--
	NO 9500381	A	19950403	NO 1995-381	19950202	<--
	AU 9668027	A1	19961219	AU 1996-68027	19961004	<--
	AU 700253	B2	19981224			
	JP 2004194662	A2	20040715	JP 2003-433721	20031226	<--
PRAI	US 1992-925405	A	19920804	<--		
	JP 1994-505433	A3	19930728	<--		
	WO 1993-US7138	W	19930728	<--		
	EP 1993-306169	A3	19930804	<--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9403472	ICM	C07H021-04
	ICS	C12P019-34; C12Q001-68
EP 587298	ECLA	C07K014/35; C12N015/10D; C12Q001/68D2A; C12Q001/68D8; C12Q001/68M10B; C12Q001/70B2B <--
EP 978570	ECLA	C07K014/35; C12N015/10D; C12Q001/68D8; C12Q001/68D2A; C12Q001/68M10B; C12Q001/70B2B <--
JP 2004194662	FTERM	4B024/AA11; 4B024/AA20; 4B024/CA04; 4B024/CA09; 4B024/HA08; 4B024/HA14; 4B063/QA18; 4B063/QA19; 4B063/QQ06; 4B063/QQ52; 4B063/QR08; 4B063/QR55; 4B063/QR62; 4B063/QS25; 4B063/QX07 <--

GI



I

AB A method for enzymic amplification of target nucleic acid sequence under conditions of substantially constant temperature, ionic strength, and pH is described. Multiple RNA copies of the target sequence are used to generate addnl. copies using a mixture of 3'-blocked and unblocked primers optionally in combination with promoter-primers to initiate DNA and RNA synthesis, preferably with a lowering of non-specific product formation. One of the blocking or modifying agents is an alkane-diol (I). The invention is useful for generating copies of a nucleic acid target sequence for purposes that include assays to quantitate specific nucleic acid sequences in clin., environmental, forensic and similar samples, cloning and generating probes. The method uses an RNA intermediate that is generated using an RNA **polymerase** and promoter-containing primers that is then converted to a DNA with a reverse transcriptase; the RNA/DNA hybrid is broken up by treatment with RNAse H. The method was demonstrated and optimized using Mycobacterium rRNA.

ST nucleic acid amplification enzymic isothermal; RNase H isothermal nucleic acid amplification; RNA **polymerase** isothermal nucleic acid amplification; reverse transcriptase isothermal nucleic acid amplification

IT Mycobacterium
Mycobacterium tuberculosis
(detection of, isothermal nucleic acid amplification for, primers derived from rRNA for)

IT Glycols, compounds
Nucleotides, compounds
Phosphorothioates
RL: BIOL (Biological study)
(oligonucleotides 3'-blocked with, as promoter primers in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and reverse transcriptase in)

IT **Genetic methods**
(**NASBA (nucleic acid sequence-based amplification)**, isothermal, amplification via RNA intermediate, RNA **polymerase** and reverse transcriptase in)

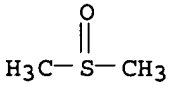
IT Nucleotides, polymers
RL: BIOL (Biological study)
(oligo-, 3'-blocked, as promoter primers in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and reverse transcriptase in)

IT Genetic element
RL: BIOL (Biological study)
(promoter, 3'-blocked oligonucleotides as, in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and reverse transcriptase in)

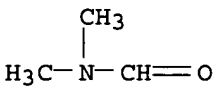
IT 154655-70-6D, 3'-oligonucleotide conjugates 154655-71-7D, 3'-oligonucleotide conjugates 154655-72-8D, 3'-oligonucleotide conjugates 154655-73-9D, 3'-oligonucleotide conjugates
RL: USES (Uses)
(as primer in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and reverse transcriptase in,

detection of Mycobacterium in relation to)
IT 153157-32-5 153157-36-9
RL: USES (Uses)
(as primer in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and reverse transcriptase in, detection of Mycobacterium tuberculosis in relation to)
IT **9068-38-6**, Reverse transcriptase
RL: USES (Uses)
(in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and RNAse H in)
IT 56-81-5, Glycerol, uses **67-68-5**, DMSO, uses **68-12-2**, Dimethylformamide, uses 107-21-1, Ethylene glycol, uses 7440-66-6, Zinc, biological studies **9012-90-2**, **DNA polymerase** 9050-76-4, Ribonuclease H
RL: USES (Uses)
(in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and reverse transcriptase in)
IT 73-03-0, Cordycepin
RL: USES (Uses)
(oligonucleotides 3'-blocked with, as promoter primers in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and reverse transcriptase in)
IT **9068-38-6**, Reverse transcriptase
RL: USES (Uses)
(in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and RNAse H in)
RN 9068-38-6 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate, RNA-dependent (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **67-68-5**, DMSO, uses **68-12-2**, Dimethylformamide, uses **9012-90-2**, **DNA polymerase**
RL: USES (Uses)
(in isothermal nucleic acid amplification via RNA intermediate, RNA **polymerase** and reverse transcriptase in)
RN 67-68-5 HCAPLUS
CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)



RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 9012-90-2 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L141 ANSWER 26 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN

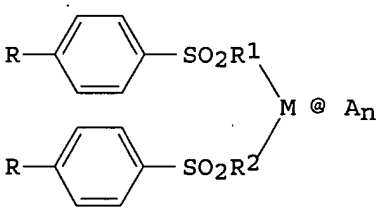
AN **1993:254538** HCAPLUS
DN **118:254538**
ED Entered STN: 26 Jun 1993
TI Sulfonyl derivatives
IN Takayanagi, Takeo
PA USA
SO Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW
DT **Patent**
LA English
IC ICM C07C335-42
ICS A61K031-63; C07D203-12; C07F003-02; C07F001-08; C07C311-48; C07C309-76; C07C311-53; C07C309-88; C07F003-10
CC 25-12 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 26, 32, 33, 63
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 493642	A1	19920708	EP 1991-100035	19910102 <--
R: CH, FR, GB, IT, LI, SE				
PRAI EP 1991-100035		19910102 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 493642	ICM	C07C335-42
	ICS	A61K031-63; C07D203-12; C07F003-02; C07F001-08; C07C311-48; C07C309-76; C07C311-53; C07C309-88; C07F003-10

OS MARPAT 118:254538
GI



I

AB The present invention consists of novel sulfonyl derivs. I [R = NR'R'',R',R'' = H, COCHR4, COCR43, SO2Me, CO2Et, CH2CH2R4, CONHCH2CH2R4, CONHCH2CO2Et, CH2CH2OCONH2; R4 = Cl, NMeCHO, ethylenimino, MeNOH, HOCH2CH2CONH, EtCONH, HONH, MeNH, HONCONHOH; R1, R2 = NMeCHO, ethylenimino, 2-hydroxy-4-pyrimidinylamino, 6-mercaptopurinyl, 5-fluorouracilyl, prednisolyl, salicyl, hydrazidyl, 1-allyl-2-thiouracilyl, hydroxylamino, isoamidyl, OH, SH, F, iodo, CCl3, MeO, EtO, CH2:CHO, PhO, benzhydryloxy, aminoethyl, ether group forming oxonium salt of ClCH2OCH2Cl, MeOCH2CH2OMe, ClCH2CH2OCH2CH2Cl, BuOMe, Ph2O, (CH2:CHCH2)2O, (CH2:CH)2O, Bu2O, PhOMe, MeOCHCl2, ClCH2OEt, HOCH2CH2OCH2CH2Cl, ClCH2CHClEt, THF; M = metal; R also = linear, branched, cyclic C1-6 alkyl, halo, Hg:NR5, R5 = C1-6 alkyl; n = 0] and complexes I (A = bio. active substance, n = 1-4) and the process for preparing I (A = bio. active substance). Thus, 4-(EtOCONH)C6H4SO2Cl was treated with CH2:CHCH2NHCSNH2 in pyridine at 30° overnight to give 4-(EtOCONH)C6H4SO2NHCSNHCH2CH:CH2 as an oil which was treated with ClCH2CH2NHOH in MeOCH2CH2OH and a concentrate Mg salt solution to give I (R = NR'R'', R' = H, R'' = EtO2C, R1 = R2 = NHCSNHCH2CH:CH2, M = Mg, A =

ClCH2CH2NHOH, n = 1).
ST aminoarylsulfonyl prepn complexation bio active substance; sulfonyl compd aminoaryl prepn complexation; bio active substance sulfonyl compd complex
IT Androgens
Estrogens
RL: RCT (Reactant); RACT (Reactant or reagent)
(as pharmaceutical agents in sulfonyl complex derivs.)
IT Bromides, reactions
Carbonates, reactions
Chlorides, reactions
Fluorides, reactions
Hydroxides
Iodides, reactions
Sulfates, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in synthesis of bis(aminoarylsulfonyl) compds.)
IT Agglutinins and Lectins
RL: RCT (Reactant); RACT (Reactant or reagent)
(complexes, as pharmaceutical agent in sulfonyl derivative)
IT 109-99-9D, metal-containing bis(aminoarylsulfonyl) compound complexes
RL: RCT (Reactant); RACT (Reactant or reagent)
(d)
IT 134380-82-8P 134380-83-9P 134380-85-1P 134380-87-3P 134380-89-5P 134380-90-8P 141219-02-5P 144207-82-9DP, magnesium complexes, compds. with pharmaceutical agents
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and complexation of, with biol. active compds.)
IT 144207-84-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and complexation of, with glycine copper derivative)
IT 13945-59-0P 22819-27-8P 134380-84-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in synthesis of bis(aminoarylsulfonyl) compds.)
IT 50-18-0P 50-24-8DP, metal-containing bis(aminoarylsulfonyl) compound complexes
50-44-2DP, compds. with magnesium benzenesulfonamides or sulfonyl derivative complexes 50-44-2DP, metal-containing bis(aminoarylsulfonyl) compound complexes 51-05-8DP, metal-containing bis(aminoarylsulfonyl) compound complexes 51-21-8DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 52-24-4DP, metal-containing bis(aminoarylsulfonyl) compound complexes 55-18-5DP, N-Nitrosodiethylamine, metal-containing bis(aminoarylsulfonyl) compound complexes 55-86-7DP, Nitrogen mustard, metal-containing bis(aminoarylsulfonyl) compound complexes 55-98-1DP, Myleran, metal-containing bis(aminoarylsulfonyl) compound complexes 56-40-6DP, Glycine, metal-containing bis(aminoarylsulfonyl) compound complexes 56-75-7DP, Chloramphenicol, metal-containing bis(aminoarylsulfonyl) compound complexes 56-86-0DP, L-Glutamic acid, metal-containing bis(aminoarylsulfonyl) compound complexes 57-92-1DP, Streptomycin, metal-containing bis(aminoarylsulfonyl) compound complexes 59-67-6DP, Nicotinic acid, metal-containing bis(aminoarylsulfonyl) compound complexes 59-85-8DP, metal-containing bis(aminoarylsulfonyl) compound complexes 61-73-4DP, Methylene blue, metal-containing bis(aminoarylsulfonyl) compound complexes 62-75-9DP, N-Nitrosodimethylamine, metal-containing bis(aminoarylsulfonyl) compound complexes 64-86-8DP, metal-containing bis(aminoarylsulfonyl) compound complexes 85-66-5DP, metal-containing bis(aminoarylsulfonyl) compound

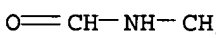
complexes 119-36-8DP, Salicylic acid methyl ester, metal-containing bis(aminoarylsulfonyl) compound complexes **123-39-7DP**, N-Methylformamide, metal-containing bis(aminoarylsulfonyl) compound complexes 147-24-0DP, metal-containing bis(aminoarylsulfonyl) compound complexes 147-85-3DP, Proline, metal-containing bis(aminoarylsulfonyl) compound complexes 150-13-0DP, 4-Aminobenzoic acid, metal-containing bis(aminoarylsulfonyl) compound complexes 612-30-6DP, compound with mercury-magnesium 4-aminomethylbenzenesulfonamide complexes 612-30-6DP, compds. with mercury-magnesium-copper glycine complexes 627-42-9DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 627-42-9DP, 2-Chloroethyl methyl ether, metal-containing bis(aminoarylsulfonyl) compound complexes 636-61-3DP, metal-containing bis(aminoarylsulfonyl) compound complexes 694-03-1DP, metal-containing bis(aminoarylsulfonyl) compound complexes 865-21-4DP, Vinblastin, metal-containing bis(aminoarylsulfonyl) compound complexes 1406-05-9DP, Penicillin, metal-containing bis(aminoarylsulfonyl) compound complexes 2114-18-3DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 3009-34-5DP, metal-containing bis(aminoarylsulfonyl) compound complexes 3416-24-8DP, metal-containing bis(aminoarylsulfonyl) compound complexes 3711-49-7DP, metal-containing bis(aminoarylsulfonyl) compound complexes 4239-06-9DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 7439-95-4DP, Magnesium, benzenesulfonamide or sulfonyl derivative complexes, compds. with pharmaceutical agents 7439-97-6DP, Mercury, -magnesium, 4-aminomethylbenzenesulfonamide complexes, compds. with copper glycine complex 7440-50-8DP, Copper, benzenesulfonamide or sulfonyl derivative complexes, compds. with pharmaceutical agents 7535-00-4DP, metal-containing bis(aminoarylsulfonyl) compound complexes 9000-92-4DP, Diastase, metal-containing bis(aminoarylsulfonyl) compound complexes 9001-12-1DP, Collagenase, metal-containing bis(aminoarylsulfonyl) compound complexes 9001-54-1DP, Hyaluronidase, compds. with magnesium benzenesulfonamides or sulfonyl derivative complexes 9002-60-2DP, Corticotropin, metal-containing bis(aminoarylsulfonyl) compound complexes 9015-68-3DP, Asparaginase, metal-containing bis(aminoarylsulfonyl) compound complexes **9032-75-1DP** , Polygalacturonase, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 9066-59-5DP, Lysozyme chloride, metal-containing bis(aminoarylsulfonyl) compound complexes 9068-67-1DP, Sulfatase, metal-containing bis(aminoarylsulfonyl) compound complexes 13479-54-4DP, compound with mercury-magnesium, 4-aminomethylbenzenesulfonamide complexes 14307-02-9DP, metal-containing bis(aminoarylsulfonyl) compound complexes 21293-29-8DP, Abscisic acid, metal-containing bis(aminoarylsulfonyl) compound complexes 24589-68-2DP, metal-containing bis(aminoarylsulfonyl) compound complexes 27134-26-5DP, metal-containing bis(aminoarylsulfonyl) compound complexes 36368-43-1DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 45721-65-1DP, metal-containing bis(aminoarylsulfonyl) compound complexes 65589-70-0DP, Acriflavine, metal-containing bis(aminoarylsulfonyl) compound complexes 110238-63-6DP, compds. with magnesium benzenesulfonamides or sulfonyl derivative complexes 134380-82-8DP, compds. with magnesium complexes, compds. with pharmaceutical agents 134380-83-9DP, compds. with magnesium complexes, compds. with pharmaceutical agents 134380-85-1DP, compds. with magnesium complexes, compds. with pharmaceutical agents 134380-87-3DP, compds. with magnesium complexes, compds. with pharmaceutical agents 134380-89-5DP, compds. with copper complexes, compds. with pharmaceutical agents 134380-90-8DP, compds. with magnesium complexes, compds. with pharmaceutical agents 134380-93-1DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 134380-96-4DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 141218-22-6DP, compds. with magnesium benzenesulfonamides or sulfonyl derivative complexes 141218-27-1DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 141218-27-1DP,

metal-containing bis(aminoarylsulfonyl) compound complexes 141218-29-3DP, metal-containing bis(aminoarylsulfonyl) compound complexes 141218-30-6DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 141219-02-5DP, compds. with magnesium complexes, compds. with pharmaceutical agents 144207-79-4DP, compds. with copper benzenesulfonamide or sulfonyl derivative complexes 144207-80-7DP, compds. with copper benzenesulfonamide or sulfonyl derivative complexes 144207-81-8DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 144207-83-0P 144207-86-3DP, metal-containing bis(aminoarylsulfonyl) compound complexes 144207-87-4DP, metal-containing bis(aminoarylsulfonyl) compound complexes 144207-88-5DP, metal-containing bis(aminoarylsulfonyl) compound complexes 144207-89-6DP, metal-containing bis(aminoarylsulfonyl) compound complexes 144207-90-9DP, metal-containing bis(aminoarylsulfonyl) compound complexes 144207-91-0DP, metal-containing bis(aminoarylsulfonyl) compound complexes 144207-92-1DP, metal-containing bis(aminoarylsulfonyl) compound complexes 144207-93-2DP, metal-containing bis(aminoarylsulfonyl) compound complexes 144230-82-0DP, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes 144230-83-1DP, metal-containing bis(aminoarylsulfonyl) compound complexes
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 51-79-6 100-66-3, Anisole, reactions 101-84-8, Diphenyl ether 107-30-2, Chloromethyl methyl ether 107-99-3, 2-Dimethylaminoethyl chloride 109-57-9, 1-Allyl-2-thiourea 109-93-3, Divinyl ether 110-71-4, 1,2-Dimethoxyethane 111-44-4, Bis(2-Chloroethyl) ether 121-60-8, 4-Acetamidobenzenesulfonyl chloride 138-37-4, Homosulfamine 142-96-1, Dibutyl ether 151-56-4, Ethyleneimine, reactions 515-64-0, Sulfisomidine 542-88-1, Bis(Chloromethyl) ether 557-40-4, Diallyl ether 628-28-4, Butyl methyl ether 628-89-7, 2-(2-Chloroethoxy)ethanol 936-02-7, Salicyl hydrazide 3188-13-4, Chloromethyl ethyl ether 7439-89-6D, Iron, salts 7439-97-6D, Mercury, salts 7440-02-0D, Nickel, salts 7440-05-3D, Palladium, salts 7440-06-4D, Platinum, salts 7440-09-7D, Potassium, salts 7440-23-5D, Sodium, salts 7440-39-3D, Barium, salts 7440-46-2, Cesium, reactions 7440-50-8D, Copper, salts 7440-57-5D, Gold, salts 7440-66-6D, Zinc, salts 7440-70-2D, Calcium, salts 21208-62-8 21926-53-4 144207-85-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in synthesis of bis(aminoarylsulfonyl) compds.)

IT **123-39-7DP**, N-Methylformamide, metal-containing bis(aminoarylsulfonyl) compound complexes **9032-75-1DP**, Polygalacturonase, compds. with magnesium benzenesulfonamide or sulfonyl derivative complexes
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 123-39-7 HCAPLUS
CN Formamide, N-methyl- (8CI, 9CI) (CA INDEX NAME)

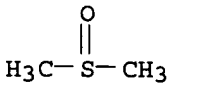


RN 9032-75-1 HCAPLUS
CN Polygalacturonase (9CI) (CA INDEX NAME)

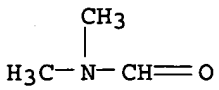
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L141 ANSWER 27 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **1989:473709** HCAPLUS
DN **111:73709**
ED Entered STN: 03 Sep 1989
TI Influence of organic-aqueous media in the **DNase** activity of

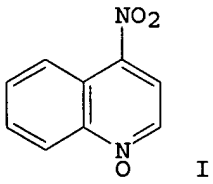
micrococcal endonuclease
AU Alcantara, A. R.; Garcia-Blanco, F.; Heras, A. M.; Sinisterra, J. V.; Ballesteros, A.
CS Org. Chem. Dep., Univ. Cordoba, Cordoba, 14004, Spain
SO Journal of Molecular Catalysis (**1989**), 52(3), 323-36
CODEN: JMCADS; ISSN: 0304-5102
DT Journal
LA English
CC 7-3 (Enzymes)
AB The hydrolysis of heat-denatured DNA by native micrococcal nuclease in several aqueous-organic media has been carried out. DMSO, THF, acetonitrile, N,N-dimethylformamide, and MeOH at 2% and 5% (volume/volume) were used. In order to explain the influence of these solvents on DNA and enzyme, ORD measurements and thermal perturbation difference spectra were gathered. The effect of the aqueous-organic media on the heat-denatured DNA structure cannot explain the degree of hydrolytic activity observed, but the catalytic activity of the enzyme in these media is related to the alteration of the secondary structure of the enzyme. The effect of solvents and temperature on the active site tyrosines 113 and 85 is discussed.
ST org solvent micrococcal nuclease activity conformation
IT Enzyme functional sites
(of micrococcal endonuclease, of Staphylococcus aureus, organic solvents effect on microenvironment of tyrosine in)
IT Solvent effect
(organic, micrococcal endonuclease conformation and **DNase** activity response to)
IT Conformation and Conformers
(secondary, of micrococcal nuclease, organic solvents effect on)
IT 67-56-1, Methanol, biological studies **67-68-5**, Dimethyl sulfoxide, biological studies **68-12-2**, N,N-Dimethylformamide, biological studies 75-05-8, Acetonitrile, biological studies 109-99-9, Tetrahydrofuran, biological studies
RL: BIOL (Biological study)
(micrococcal endonuclease **DNase** activity and structure response to aqueous)
IT 60-18-4, Tyrosine, properties
RL: PRP (Properties)
(of micrococcal endonuclease active site positions 85 and 113, organic solvents effect on microenvironment of)
IT 9013-53-0, Micrococcal endonuclease
RL: BIOL (Biological study)
(organic solvents effect on conformation and **DNase** activity of, of Staphylococcus aureus)
IT **67-68-5**, Dimethyl sulfoxide, biological studies **68-12-2**, N,N-Dimethylformamide, biological studies
RL: BIOL (Biological study)
(micrococcal endonuclease **DNase** activity and structure response to aqueous)
RN 67-68-5 HCAPLUS
CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)



RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



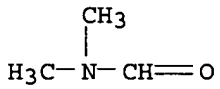
L141 ANSWER 28 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **1983:138514** HCAPLUS
DN **98:138514**
ED Entered STN: 12 May 1984
TI **DNA polymerase** deficient assay
AU Rosenkranz, Herbert S.; Hyman, Julie; Leifer, Zev
CS Dep. Microbiol., New York Med. Coll., Valhalla, NY, USA
SO Progress in Mutation Research (**1981**), 1(Eval. Short-Term Tests Carcinog.: Rep. Int. Collab. Program), 210-18
CODEN: PMRSDJ; ISSN: 0731-2849
DT Journal
LA English
CC 4-1 (Toxicology)
GI



I

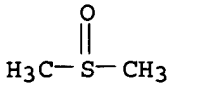
AB Inhibition of **DNA polymerase**-deficient Escherichia coli strains (W3110 and P3478) was used as a parameter in the determination of mutagenicity of 42 chemical compds. by using the disk diffusion assay (Slater, E. E., et al., 1971) and the modified liquid suspension assay (McCoy, E. C., et al., 1979). 4-nitroquinoline N-oxide (I) [56-57-5], β-propiolactone [57-57-8] and o-toluidine [95-53-4] were strongly mutagenic when determined by the disk diffusion method. dinitrosopentamethylene tetramine [101-25-7], methylazoxymethanol acetate [592-62-1] And epichlorohydrin [106-89-8] were strongly mutagenic in the presence or absence of S9 mix., I, DL-ethionine [67-21-0] and safrole [94-59-7] were strongly mutagenic in the presence of S9 mix and 3-methyl-4-nitroquinoline N-oxide [14073-00-8], 2-naphthylamine [91-59-8], isopropyl N-(3-chlorophenyl)carbamate [101-21-3], azoxybenzene [495-48-7], hydrazine [302-01-2], 4,4'-methylenebis(2-chloroaniline) [101-14-4] and auramine [2465-27-2] were strongly mutagenic in the absence of S9 mix. when determined by the liquid suspension assay.
ST Escherichia inhibition chem mutagenicity assay
IT Escherichia coli
(**DNA polymerase**-deficient strains of, inhibition of, in chemical mutagenicity assay)
IT Mutagens
(**DNA polymerase**-deficient Escherichia coli inhibition assay for)
IT Carcinogens
(mutagenicity of, **DNA polymerase**-deficient

Escherichia coli inhibition assay for)
IT 50-18-0 50-32-8, biological studies 50-81-7, biological studies
51-79-6 53-96-3 56-53-1 56-57-5 57-50-1, biological studies
57-57-8 59-89-2 60-11-7 61-82-5 63-68-3, biological studies
67-21-0 67-66-3, biological studies **68-12-2**, biological
studies 71-55-6 79-44-7 86-30-6 91-59-8 92-87-5 94-59-7
95-53-4, biological studies 96-45-7 96-48-0 101-14-4 101-21-3
101-25-7 106-89-8, biological studies 120-12-7, biological studies
129-00-0, biological studies 134-32-7 302-01-2, biological studies
495-48-7 547-58-0 592-62-1 680-31-9, biological studies 781-43-1
2465-27-2 14073-00-8 28322-02-3 54827-17-7
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(mutagenicity of, **DNA polymerase**-deficient
Escherichia coli inhibition assay for)
IT **68-12-2**, biological studies
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(mutagenicity of, **DNA polymerase**-deficient
Escherichia coli inhibition assay for)
RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)

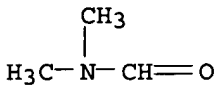


L141 ANSWER 29 OF 29 HCAPLUS COPYRIGHT 2005 ACS on STN
AN **1975:528150** HCAPLUS
DN **83:128150**
ED Entered STN: 12 May 1984
TI Effects of organic solvents on Escherichia coli **DNA**
polymerase III
AU Heinze, John E.; Carl, Philip L.
CS Dep. Microbiol., Univ. Illinois, Urbana, IL, USA
SO Biochimica et Biophysica Acta (**1975**), 402(1), 35-40
CODEN: BBACAQ; ISSN: 0006-3002
DT Journal
LA English
CC 7-3 (Enzymes)
AB The polymerizing ability of E. coli **DNA polymerase** III
was enhanced by a variety of water-miscible organic solvents of which Me2SO
at 17% (volume/volume) was the most effective tested. The extent of
stimulation depended on the organic solvent used and its concentration, but
showed
no obvious correlation with the chemical structure of the solvent or its
dielec. constant Kinetic studies indicated that the mechanism of
stimulation is complex.
ST **DNA polymerase** activation ethanol; org solvent
DNA polymerase
IT 56-81-5, biological studies 64-17-5, biological studies 67-56-1,
biological studies 67-63-0, biological studies 67-64-1, biological
studies **67-68-5**, biological studies **68-12-2**,
biological studies 71-23-8, biological studies 75-65-0 78-83-1
78-92-2 123-91-1
RL: BIOL (Biological study)
(**DNA polymerase** III response to)
IT **37217-33-7**
RL: BIOL (Biological study)

(of Escherichia coli, organic solvents effect on)
IT **67-68-5**, biological studies **68-12-2**, biological studies
RL: BIOL (Biological study)
(**DNA polymerase** III response to)
RN 67-68-5 HCAPLUS
CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)



RN 68-12-2 HCAPLUS
CN Formamide, N,N-dimethyl- (8CI, 9CI) (CA INDEX NAME)



IT **37217-33-7**
RL: BIOL (Biological study)
(of Escherichia coli, organic solvents effect on)
RN 37217-33-7 HCAPLUS
CN Nucleotidyltransferase, deoxyribonucleate, III (9CI). (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

=> => fil reg
FILE 'REGISTRY' ENTERED AT 09:45:04 ON 26 MAY 2005
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STRUCTURE FILE UPDATES: 25 MAY 2005 HIGHEST RN 851163-60-5
DICTIONARY FILE UPDATES: 25 MAY 2005 HIGHEST RN 851163-60-5

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TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

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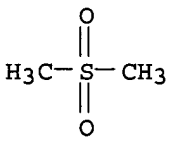
```
**********************************************************************
*                                                                    *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                                    *
**********************************************************************
```

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d ide can

L142 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN
RN 67-71-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **Methyl sulfone (6CI, 8CI)**
OTHER NAMES:
CN Dimethyl sulfone
CN Dimethyl sulphone
CN Lignisul MSM
CN Methylsulfonylmethane
CN MSM
CN NSC 63345
FS 3D CONCORD
DR 54841-73-5
MF C2 H6 O2 S
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, GMELIN*, HODOC*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1431 REFERENCES IN FILE CA (1907 TO DATE)
17 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1431 REFERENCES IN FILE CAPLUS (1907 TO DATE)
49 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 142:417313

REFERENCE 2: 142:387078

REFERENCE 3: 142:379286

REFERENCE 4: 142:372923

REFERENCE 5: 142:360891

REFERENCE 6: 142:340750

REFERENCE 7: 142:340738

REFERENCE 8: 142:335806

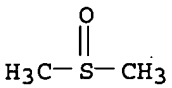
REFERENCE 9: 142:335036

REFERENCE 10: 142:318498

=> => d ide can

L143 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN
RN **67-68-5** REGISTRY
ED Entered STN: 16 Nov 1984
CN Methane, sulfinylbis- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Methyl sulfoxide (8CI)
OTHER NAMES:
CN Demavet
CN Demeso
CN Demsodrox
CN Dimethyl sulfoxide
CN Dimethyl sulphoxide
CN Dimexide
CN Dimexidum
CN Dipirartril-tropico
CN DMS 70
CN DMS 90
CN DMSO
CN Dolicur
CN Domoso
CN Dromisol
CN Durasorb
CN Gamasol 90
CN Herpid
CN Hyadur
CN Infiltrina
CN Kemsol
CN NSC 763
CN Rimso 50
CN Sclerosol
CN Somipront
CN SQ 9453
CN Sulfinylbismethane
CN Syntexan
FS 3D CONCORD
DR 705301-21-9, 8070-53-9, 164071-41-4
MF C2 H6 O S
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA,

PROMT, PS, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**, WHO
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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29445 REFERENCES IN FILE CAPLUS (1907 TO DATE)
39 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 142:421941

REFERENCE 2: 142:421415

REFERENCE 3: 142:421270

REFERENCE 4: 142:420057

REFERENCE 5: 142:419964

REFERENCE 6: 142:417313

REFERENCE 7: 142:417246

REFERENCE 8: 142:417223

REFERENCE 9: 142:417152

REFERENCE 10: 142:414539

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FILE LAST UPDATED: 24 MAY 2005 <20050524/UP>
MOST RECENT DERWENT UPDATE: 200533 <200533/DW>
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FOR DETAILS. <<<

=> d all abeq tech abex tot

L62 ANSWER 1 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2005-180793 [19] WPIX
CR 2002-657495 [70]
DNC C2005-057858
TI Polynucleotide amplification composition comprises polynucleotide amplification reaction mixture incorporated with low molecular weight compound of amides, sulfones, sulfoxides or diols to obtain the amplification at low temperature.
DC B04 D16
IN **CHAKRABARTI, R; SCHUTT, C**
PA (CHAK-I) CHAKRABARTI R; (SCHU-I) SCHUTT C
CYC 1
PI US 2005042627 A1 20050224 (200519)* 35 C12Q001-68 <--
ADT US 2005042627 A1 CIP of US 2002-56917 20020125, Provisional US 2003-451642P 20030304, Provisional US 2003-451650P 20030304, US 2004-792404 20040303
PRAI US 2004-792404 20040303; US 2002-56917 20020125;
US 2003-451642P 20030304; US 2003-451650P 20030304
IC ICM **C12Q001-68**
ICS C12P019-34
AB US2005042627 A UPAB: 20050321
NOVELTY - Polynucleotide amplification composition comprises a polynucleotide amplification reaction mixture incorporated with a high concentration of a low molecular weight compound to obtain the amplification at low temperature. The low molecular weight compound is amides, sulfones, sulfoxides or diols.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for performing a polynucleotide amplification reaction at low temperature comprising adding to a polynucleotide amplification reaction mixture the low molecular weight compound in a concentration sufficient to accomplish the amplification at the low temperature.
USE - For performing polynucleotide amplification reaction at low temperature (claimed).
ADVANTAGE - The incorporation of the low molecular weight compound to the polynucleotide amplification reaction mixture enhances the amplification reaction.
Dwg.0/16
FS CPI
FA AB; DCN
MC CPI: B04-E01; B04-N04; B10-E04A; B10-E04C; D05-H12; D05-H18B
TECH UPTX: 20050321
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Condition: The amplification reaction is performed using an extension temperature of not more than 62 (preferably not more than 53)degreesC, or a denaturing temperature of not more than 85 (preferably not more than 75)degreesC. The polynucleotide amplification reaction is enhanced by a factor of at least 3 (preferably at least 5).
ABEX UPTX: 20050321

SPECIFIC COMPOUNDS - The low molecular weight compound is 1,2-butanediol, 1,3-butanediol, 1,5-pentanediol, 1,6-hexanediol, ethylene glycol, 1,2-propanediol, 1,3-propanediol, 1,4-butanediol, 1,2-pentanediol, 2,4-pentanediol, 1,5-pentanediol, cis-1,2-cyclopentanediol, trans-1,2-cyclopentanediol, 1,2-hexanediol, or 2-methyl-2,4-pentanediol (claimed).

EXAMPLE - **Polymerase** chain reaction (**PCR**) enhancing capabilities of diol cosolvents were carried out using glycolipid transfer protein (GTP) as primary template. Standard protocol for annealing temperature and concentration gradient screening was followed. Additives of N-methylformamide, N,N-dimethylformamide, acetamide, N-methylacetamide, N,N-dimethylacetamide and propionamide were tested with GTP over annealing temperature gradients using 95degreesC denaturing temperature, and 1,5-pentanediol of 0.1-0.6M in 0.1M intervals cis-1,2-cyclopentanediol of 0.05-0.3 M in 0.05M intervals. The diol amplification data in GTP showed that 1,5-pentanediol performed best in the template with 0.16-0.47M effective concentration range and potency of 1.

L62 ANSWER 2 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN **2002-657495** [70] WPIX
CR 2005-180793 [19]
DNC **C2002-184484**
TI Composition, useful for enhancing **polymerase** chain reaction and other polynucleotide replication reactions, comprises low molecular weight organic amides, sulfones, or sulfoxides with template polynucleotides and **polymerases.**
DC B04 B05 D16
IN **CHAKRABARTI, R; SCHUTT, C E**
PA (UYPR-N) UNIV PRINCETON; (CHAK-I) CHAKRABARTI R; (SCHU-I) SCHUTT C E
CYC 100
PI WO 2002061137 A2 20020808 (200270)* EN 64 C12Q001-68 <--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
US 2003039992 A1 20030227 (200318) C12Q001-68 <--
AU 2002241958 A1 20020812 (200427) C12Q001-68 <--
ADT WO 2002061137 A2 WO 2002-US2068 20020125; US 2003039992 A1 Provisional US 2001-264935P 20010130, Provisional US 2001-298166P 20010614, Provisional US 2001-298250P 20010614, US 2002-56917 20020125; AU 2002241958 A1 AU 2002-241958 20020125
FDT AU 2002241958 A1 Based on WO 2002061137
PRAI US 2001-298250P 20010614; US 2001-264935P 20010130; US 2001-298166P 20010614; US 2002-56917 20020125
IC ICM **C12Q001-68**
AB WO 200261137 A UPAB: 20050321
NOVELTY - A composition (C) for performing a polynucleotide replication reaction, comprises a buffer, one or more template polynucleotides, nucleotide triphosphates, one or more **polymerase** enzymes or its fragments, and one or more reaction adjuvants (I).
DETAILED DESCRIPTION - A composition (C) for performing a polynucleotide replication reaction, comprises a buffer, one or more template polynucleotides, nucleotide triphosphates, one or more **polymerase** enzymes or its fragments, and one or more reaction adjuvants of formula (I).
R1 = C or S;

R2 = H or CH3;
R3 = C or N;
R4, R5 and R6 = H, alkyl, alkyl or cycloalkyl of length n (substituted by cycloalkyl or halo-, hydroxy- or alkoxy);
R3, R4, R5 and R6 = together optionally form a cyclic structure; and
X = =O or O=C=O.
Provided that:
(i) when R1 is C, X is =O, R3 is N and R6 is absent;
(ii) when R1 is S, X is =O or O=C=O, and R3 is C;
(iii) R2 is H or CH3, when one or more of R4, R5 and R6 is not H;
(iv) when R4, R5 and R6 are other than H, then R2 is an alkyl (unsubstituted or halo-, hydroxy- or alkoxy- substituted) or 3-8C cycloalkyl, when R1 is C or 2-8C when R1 is S; and
(v) when 3-8C, then R1 is C or 2-8C, when R1 is S when any two of R2, R3, R4, R5 and R6 optionally form a cyclic structure in which cyclization is effected through a bond between them.
INDEPENDENT CLAIMS are also included for:
(1) Kit for performing a polynucleotide amplification reaction, comprising a container, one or more of (I) and instructions for using the one or more compounds in a polynucleotide replication reaction;
(2) A method of performing a polynucleotide replication reaction in the presence of (I)
USE - (C) is useful for performing a polynucleotide replication reaction, preferably an amplification reaction, such as **polymerase** chain reaction, nucleic acid sequence based amplification, transcription-based amplification system, self-sustained sequence replication, ligation amplification reaction, Q- beta replicase amplification and ligase chain reaction.
The adjuvants are also useful for optimizing a polynucleotide replication reaction for a polynucleotide, by providing several reaction adjuvant comprising the compounds, performing several polynucleotide replication reactions on the polynucleotide, each reaction being performed under equivalent conditions, but with varying type or amount of the reaction adjuvants in the reactions, and selecting the type and concentration of reaction adjuvant that yields the most favorable results for polynucleotide replication of the selected polynucleotide template, thus optimizing the polynucleotide replication reaction for the selected polynucleotide template (claimed).
The compositions and methods are useful in reverse transcriptase (RT) **PCR**, site-specific mutagenesis, **PCR**-based labeling of oligonucleotides, rapid amplification of cDNA ends, cloning/expression of DNA, genomic sequencing, DNA computing, which uses an amplification step as a central component, RT reactions on templates with secondary structure, denaturing gradient gel electrophoresis, medical diagnostics, quantitative **PCR**, amplification of tandem repeats in a genome, in situ **PCR**, and in forensics where sample sizes is limited and copy number is low.
ADVANTAGE - Use of the compositions enables production of multiple copies of target genes or other nucleic acid sequences with high yield and specificity. The compositions increase specificity and yield in the amplification of GC rich targets which are difficult to amplify.
Dwg.0/4

FS CPI
FA AB; GI; DCN
MC CPI: **B04-L04A**; B07-D03; B07-D06; B07-E03; B10-A01; B10-D01; B10-D03; **B10-F01**; **B10-F02**; B12-K04A; **B12-K04F**; **D05-A02B**; D05-H09; **D05-H12**; **D05-H12D1**; **D05-H18**
TECH UPTX: 20021031
TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Composition: The reaction

adjuvant is preferably 2-pyrrolidone, N-methyl pyrrolidone and N-hydroxyethyl pyrrolidone, delta-valerolactam, epsilon-caprolactam, N-formyl morpholine, propionamide or N,N-dimethyl acetamide.
The **polymerase**(s) or its fragments is Taq, Tth, Tme, Tli, Pfu **polymerase**, DNA **polymerase** I, Klenow fragment or reverse transcriptase.
The reaction adjuvant has a potency of at least 75% of the potency of dimethyl sulfoxide (DMSO) or formamide, or a specificity of at least 80% of the specificity of DMSO or formamide in an equivalent polynucleotide chain reaction (**PCR**). The adjuvant has an effective range spanning at least 0.1 M. The polynucleotide template comprises greater than 50% G+C.
Preferred Kit: The kit further comprises one or more of a polynucleotide replication reaction buffer, nucleotide triphosphates, oligonucleotide primers, a known template polynucleotide for use as a control and one or more **polymerase** enzymes. The kit is customized for performing amplification reactions.

ABEX UPTX: 20021031

SPECIFIC COMPOUNDS - (I) is specifically claimed as **tetramethylene sulfone**, **tetramethylene sulfoxide**, methyl sulfone, ethyl sulfone, n-propyl sulfone, n-propyl sulfoxide or methyl sec-butyl sulfoxide.
EXAMPLE - The effects of sulfone additives on **polymerase** chain reaction (**PCR**) amplification were studied using three different GC-rich templates. Methyl sulfone, ethyl sulfone, n-propyl sulfone, **tetramethylene sulfone**, butadiene sulfone (**sulfolane**), 2,4-dimethylsulfolane, dimethyl sulfoxide (DMSO) and betaine were tested.
PCR was carried out using 10 mM Tris-HCl (pH 8.8), 50 mM potassium chloride (KCl), 1.5 mM magnesium chloride (MgCl2), 0.01% (w/v) gelatin, 0.2 microM primers, 0.06 ng/microl template, 0.2 mM each dNTP, 0.04 U/microl Taq **polymerase.** The templates used were a 996 bp segment of human myeloid leukocyte c-jun cDNA, a 511 bp segment of human prostate-specific membrane antigen (PSM) cDNA, and bovine brain glycolipid transfer protein (GTP) cDNA (660 bp). c-jun primer j1: d(ATGACTGCAAAGATGGAAACG), primer j2: d(TCAAAATGTTTGCAACTGCTGCG), PSM primer p1: d(AAACACTGCTGTGGTGGA), primer p2: d(TAGCTCAACAGAATCCAGGC), GTP primer g1: d(GAATTCGAAATGGCGCTGCTGG) or primer g2: d(CTCGAGGTCCAGAGTACCCGCTGTG).
A 996 bp segment of human myeloid leukocyte c-jun cDNA (64% GC) was selected as the central target for this investigation because of its particularly high GC content. Each of the additives was initially tested with c-jun at a few evenly-spaced concentrations over a 44-58degreesC annealing temperature gradient, using a conventional denaturing temperature of 92degreesC. The only compound that yielded discernable amplification under these denaturing conditions was **sulfolane.**
None of the other additives tested - DMSO, betaine, or the other sulfones - showed any amplification.
A denaturing temperature of 95degreesC was employed in order to examine the capabilities of the other compounds in amplifying c-jun under less stringent conditions. Again, each additive was tested over a 44-58degreesC annealing temperature gradient, at a few concentrations that were chosen to provide a rough perception of the effective range of the compounds and also to determine whether the optimal annealing temperature was sensitive to additive concentration. It was found that the optimal annealing temperature of each compound, except betaine, was 50degreesC and did not depend on concentration. In the case of betaine, the optimal annealing temperature was 53degreesC. n-Propyl sulfone and dimethylsulfolane were found to be ineffective at any of the concentrations tested in these initial screenings, and were omitted from further studies.

Each remaining additive was subsequently tested over a range of closely spaced molar concentrations at their optimal annealing temperatures. These concentrations, chosen partly on the basis of the concentrations that were effective in the initial screenings, were as follows: methyl sulfone - 0.2-1.0M at 0.1M intervals; ethyl sulfone - 0.2, 0.3, 0.4M; **sulfolane** - 0.05M and 0.1-0.7M at 0.1M intervals; sulfolene - 0.05M and 0.1-0.4M at 0.1M intervals, DMSO - 0.2-1.9M at 0.1M intervals; betaine - 0.3-1.0M at 0.1M intervals and 1.5-3.0 at 0.5M intervals. The additives that performed best in the c-jun studies - methyl sulfone, **sulfolane** and DMSO were chosen for additional studies using two more DNA targets: PSM cDNA and bovine GTP cDNA (660 bp). As in the case of c-jun, the additives were first tested at a few concentrations over an annealing temperature gradient of 44-58degreesC, and then at various concentrations at their optimal annealing temperatures (48degreesC for PSM, 50degreesC for GTP). The additive concentration that yielded the maximum target band amplification was found in each case to display a specificity that was within 2% of the best specificity.

L62 ANSWER 3 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN **2002-010797** [01] WPIX
DNC **C2002-002654**
TI Amplifying a target nucleic acid, useful in e.g. research and forensic science, by combining a target nucleic acid with reversibly modified nucleic acid primers and nucleoside triphosphates to inhibit formation of undesired products.
DC B04 D16
IN BONNER, A G
PA (BIOL-N) BIOLINK PARTNERS INC
CYC 95
PI WO 2001075139 A1 20011011 (200201)* EN 45 C12P019-34
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2001053129 A 20011015 (200209) C12P019-34
US 2003162199 A1 20030828 (200357) C12Q001-68 <--
ADT WO 2001075139 A1 WO 2001-US10901 20010403; AU 2001053129 A AU 2001-53129 20010403; US 2003162199 A1 Provisional US 2000-194288P 20000403, Cont of WO 2001-US10901 20010403, US 2002-264295 20021003
FDT AU 2001053129 A Based on WO 2001075139
PRAI US 2000-194288P 20000403; US 2002-264295 20021003
IC ICM C12P019-34; **C12Q001-68**
ICS C07H021-04; C07H021-100
AB WO 200175139 A UPAB: 20020105
NOVELTY - Amplifying a target nucleic acid, comprising combining a target nucleic acid with one or more nucleic acid primers and nucleoside triphosphates which have been reversibly modified to inhibit the formation of undesired amplification products, under conditions allowing amplification to occur, is new.

DETAILED DESCRIPTION - Amplifying a target nucleic acid comprises combining a target nucleic acid with one or more nucleic acid primers capable of binding to the target nucleic acid, a nucleic acid **polymerase**, and several nucleoside triphosphates, where the target nucleic acid, primers and nucleoside triphosphates have been reversibly modified to inhibit the formation of undesired amplification products, thus forming a resultant mixture resulting in the selective amplification of the target nucleic acid.

INDEPENDENT CLAIMS are also included for the following:

(1) an amplified nucleic acid produced by the novel method;

(2) a kit for conducting **polymerase** chain reaction (**PCR**) comprising a reagent for reversibly chemically modifying a nucleic acid or nucleobase so that when the nucleic acid is used in the reaction, the formation of undesired amplification products is inhibited, and instructions for use; and

(3) a compound which can amplify a target nucleic acid and reduce undesired amplification products, comprising a reaction mixture of a removable protecting group and guanosine 5'-triphosphate.

USE - The amplification method is also advantageously used to amplify virtually any target nucleic acid such as a nucleic acid fragment, gene fragment, cDNA or chromosomal fragment. The methods and compositions permit the detection and amplification of small amounts of nucleic acid, and as such are applicable to diagnostic applications, research and forensic science. The methods and compositions are also useful to detect or characterize nucleic acid sequences associated with infectious diseases, genetic and non-genetic disorders, or cellular disorders such as cancer; and to detect viral nucleic acid molecule within a nucleic acid sample derived from human cell sample, cancerous cells by detecting specific chromosomal rearrangements or changes in gene expression, and the sex or species of origin of even minute biological samples. These are also used in research applications in which genetic analyses must be performed on limited amounts of nucleic acid sample or in the presence of background DNA. The reversibly modified nucleic acids are used to prevent or disrupt hybridization during routine sample preparation, and provide nuclease resistance to nucleic acids which may be applications in therapeutics. Hypersensitive protecting groups may provide improved approaches to drug delivery and gene therapy.

ADVANTAGE - The method does not require manipulation of the reaction mixture following initial preparation, may be used in existing automated **PCR** amplification systems and with in situ amplification methods where addition of reagents after the initial denaturation step is inconvenient or impractical.

Dwg.0/11

FS CPI

FA AB; DCN

MC CPI: B04-E01; B04-E05; **B04-L04**; B07-D04C; B10-A12B; B10-C04; **B10-F02**; **B12-K04F**; **D05-A02B**; **D05-H12D1**; **D05-H18B**

TECH UPTX: 20020105

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: The reversibly modified target nucleic acid or primers comprise at least one nucleobase that has been reversibly modified chemically, where the primers are reversibly modified to inhibit the formation of undesired amplification products. The amplification which is by **PCR**, preferably hot-start **PCR**, results in a reduced amount of non-specific nucleic acid amplification products. The reversibly modified nucleobase comprises a removable protecting group selected from glyoxal dihydrate, glyoxal hydrogen sulfite, 2,3-dihydroxy-1,4-dioxane, pyruvaldehyde (methylglyoxal), 2,3-butanedione (dimethylglyoxal), 2,3-pentadione (ethylmethylglyoxal), phenylglyoxal, and di-3-pyridylglyoxal, preferably glyoxal. Alternatively, the removable protecting group is selected from 3,4,5,6,-tetrahydrophthalic anhydride, 3-ethoxy-2-ketobutyraldehyde (kethoxal), ninhydrin, hydroxyacetone, diethyl oxalate, diethyl me oxalate, 1,2-naphthoquinone-4-sulfonic acid, pyruvaldehyde, gamma-carboxyacylamides, amidines and carbamates. The amide is a trifluoroacetyl or trichloroacetyl. The gamma-carboxyacylamide is acontinoyl, maleyl, citriconyl, phenoxyacetyl or acetoacetyl. The amidine is imidoamide, and the carbamate is ethoxycarbonyl. The method also includes heating the resultant mixture for a time sufficient to remove the

protecting group. The resultant reaction mixture is subjected to at least one thermal cycle. The **polymerase** is an E. coli DNA **polymerase** I, TAQ **polymerase**, Kloenow fragment of E. coli DNA **polymerase** I, reverse transcriptase, and thermostable DNA **polymerase**. The **polymerase** is a thermostable DNA **polymerase**.
Preferred Kit: The kit further comprises a nucleic acid primer or a nucleic acid **polymerase**, and at least one other component for conducting **polymerase** amplification reaction.

ABEX UPTX: 20020105
EXAMPLE - 5' Dimethoxytrityl (DMT)-guanosine was prepared by allowing N6-isobutryl, 5'-dimethoxytrityl guanosine to stand in ammonium hydroxide at 55 degrees C for 12 hours. The product was isolated as an amorphous, white solid after removal of water and ammonia. The crude product was dissolved in 1 ml of dimethylformamide-water. Glyoxylated, 5'DMT-guanosine was prepared by mixing the crude 5'-DMT-guanosine solution with glyoxal:water solution. The mixture was allowed to stand in a sealed tube at 55 degrees C for 2 hours, and product was analyzed by high performance liquid chromatography (HPLC). Glyoxylated, 5'DMT-guanosine was purified by preparative reversed phase HPLC. Glyoxylated, 5'DMT-guanosine was converted to DMT-guanosine by mixing equal volumes of glyoxylated 5'-DMT-guanosine solution and a buffer solution, allowing the mixture to stand at 55 degrees C in a sealed tube and aliquots were analyzed by HPLC using Gradient-1. Samples were analyzed at 260 nm with a Waters 600 Solvent Delivery system and a Waters 486 variable wavelength UV (ultraviolet) detector. A Vydac column was used with gradient of solvent A. Glyoxylated primers were purified by preparative, reversed phase HPLC using Gradient-2 with the Primer-1 mixture requiring 2 injections of 200 ml each. Samples were concentrated to dryness in a Speedvac at 55 degrees C, redissolved in 200 ml and frozen. Concentrations of glyoxylated primers were determined by comparison to the unmodified, primer stock solutions of known concentrations. The unmodified and glyoxylated primer solutions were analyzed by HPLC by Gradient-2 and the peak areas of these analyses were used to adjust the concentrations suitable for **polymerase** chain reaction (**PCR**). Analysis of the oligonucleotides by HPLC showed no discernible differences for the elution times of the primer and the glyoxylated primer. Since reversed phase HPLC was unable to resolve minor changes in the hydrophilic character of oligonucleotides. Oligonucleotides of any size and sequence from 3-30 residues typically eluted within a narrow range of solvent conditions on a reversed phase column. Use of the chemically modified glyoxylated primers without pre-incubation in the **PCR** protocol, resulted in a significant decrease in the intensity of the band corresponding to the amplified target sequence, and a significant decrease in the intensity of the bands corresponding to the non-specific amplification products. Use of the chemically modified glyoxylated primers with pre-incubation in the **PCR** protocol, resulted in a strong signal for the band corresponding to the amplified target sequence, and a decreased intensity of the bands corresponding to the non-specific amplification products compared to the results with unmodified primers.

L62 ANSWER 4 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN **2001-246729** [26] WPIX
DNC **C2001-074354**
TI Reversibly inactivating thermostable DNA **polymerase** or ligase for use in a **PCR** reaction or kit comprises mixing dried enzyme with anhydrous dicarboxylic acid in an anhydrous aprotic solvent.
DC B04 D16
IN LOUWRIER, A
PA (ADBI-N) ADVANCED BIOTECHNOLOGIES LTD

CYC 27
PI EP 1078984 A1 20010228 (200126)* EN 10 C12N009-99
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
GB 2353530 A 20010228 (200126) C12N009-99
GB 2353530 B 20010627 (200137) C12N009-99
JP 2002199877 A 20020716 (200261)# 7 C12N009-12
US 6479264 B1 20021112 (200278) C12N009-00
ADT EP 1078984 A1 EP 2000-307337 20000825; GB 2353530 A GB 2000-21086 20000825; GB 2353530 B GB 2000-21086 20000825; JP 2002199877 A JP 2000-364771 20001130; US 6479264 B1 US 2000-649707 20000825
PRAI GB 1999-20194 19990827; JP 2000-364771 20001130
IC ICM C12N009-00; C12N009-12; C12N009-99
ICS C08H001-00; C12N015-09; C12P019-34; C12Q001-48; **C12Q001-68**
AB EP 1078984 A UPAB: 20010515
NOVELTY - Reversibly inactivating thermostable DNA **polymerase** or ligase comprising mixing dried enzyme with anhydrous dicarboxylic acid in an anhydrous aprotic solvent, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a reversibly inactivated DNA **polymerase** or ligase produced by the method; and

(2) a **PCR** kit comprising the reversibly inactivated DNA **polymerase.**

USE - The method produces a reversibly inactivated thermostable DNA **polymerase** or ligase (claimed). The **polymerase** can be incorporated into a **PCR** kit (claimed).

ADVANTAGE - The reversibly denatured **polymerase** can be heat reactivated prior to a **PCR** reaction and thus overcomes the problem of non-specific primer annealing and extension. The method excludes water and therefore does not suffer from pH based denaturation of the enzyme and is more rapid (5 hours rather than 12 hours) than prior art methods.

Dwg.0/4
FS CPI
FA AB; DCN
MC CPI: B04-E01; B04-E05; **B04-L04A**; B04-L08; B11-C08E3; B11-C08E5; B11-C09; **B12-K04**; **B12-K04F**; **D05-H18B**; D05-H19B
TECH UPTX: 20010515
TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method : The dried **polymerase** or ligase (less than 5-10% in the presence of lyoprotectants) is first suspended in the aprotic organic solvent and the anhydrous dicarboxylic acid (e.g. citraconic anhydride or cis-aconitic anhydride) is added subsequently. The reaction takes place at a temperature greater than 30 degreesC. The solid phase comprising the inactivated enzyme is then recovered and washed with an organic solvent (e.g. hexane) before being dried.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Solvent: The aprotic solvents are t-methyl butyl ether (t-MBE), butyl ether, carbon tetrachloride, cyclohexanone, ethyl acetate, methyl ethyl ketone, methyl pentanone, propyl ether, pyridine and **sulfolane.**
ABEX UPTX: 20010515
EXAMPLE - 50000 units of DNA **polymerase** from Thermus aquaticus was vacuum dried in 2% sucrose as lyoprotectant in double-distilled, de-ionized water. The dried enzyme was then added to 5 ml anhydrous t-methyl butyl ether (t-MBE), 5% v/v, and an excess of citraconic anhydride added to modify the lysine groups. The reaction was incubated at 37 degreesC for 5 hours after which the powder was washed 4 times with 10

ml hexane. The enzyme was stored at -20 degreesC either as a powder or in storage buffer (20 mM Tris-HCl, 100 mM potassium chloride, 0.1 mM ethylenediamine-tetraacetic acid, 1 mM dithiothreitol, 0.5% (v/v) Tween 20, 0.5% Nonidet P40, 50% glycerol, pH 9.2) at a concentration of 5 units/mul.
The enzyme was then reactivated by incubation at 95 degreesC for 15 minutes prior to performing **PCR** on human DNA using beta-actin primers:
(i) 5' ATTTGCGGTGGACGATGGAG 3'
(ii) 5' AGAGATGGCCACGGCTGCTT 3'
The reactivated enzyme produced the desired product whereas a control with no activation step produced no product.

L62 ANSWER 5 OF 5 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN **1989-289783** [40] WPIX
DNC **C1989-128255**
TI New chemical labelling of nucleoside(s), and reagents for nucleic acid - comprises reacting e.g. DNA with luminol in the presence of an aldehyde or a ketone.
DC B04 D16
PA (SHMA) SHIMADZU SEISAKUSHO KK
CYC 1
PI JP 01213295 A 19890828 (198940)* 6
ADT JP 01213295 A JP 1988-38342 19880219
PRAI JP 1988-38342 19880219
IC C07H019-00; C07H021-00; **C12Q001-68**
AB JP 01213295 A UPAB: 19930923
Cemical labelling of nuceosides, comprises reaction of a cpd. with a nucleoside molecule and luminol, in the presence of an aldehyde or a ketone, for introducing luminol to the nucleic acid base of the cpd.
The cpd. containing nucleosides is pref. DNA, RNA, or nucleoside or nucleotide. The nucleic acid base is pref. adenine, cytosine, thymine or uracyl. The aldehyde or ketone is prefer. formaldehyde, acetoaldehyde, propionealdehyde, butylaldehyde, acetone, ethylmethylketone, ethylrpopylketone, butylmethylketone, or diethylketone.
USE/ADVANTAGE - Used for reagents of nucleic acid marking and nucleic acid samples.
0/0
FS CPI
FA AB; DCN
MC CPI: B04-B03; B04-B04A1; B06-D06; B10-D01; **B10-F02**; B11-C07B; B12-K04; D05-H09; **D05-H12**

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(FILE 'HOME' ENTERED AT 10:31:06 ON 26 MAY 2005)
SET COST OFF

FILE 'WPIX' ENTERED AT 10:31:17 ON 26 MAY 2005
L1 10779 S (B10-F? OR C10-F?)/MC
E TETRAMETHYLENE/DCN
E TETRAMETHYLENE/CN
L2 2 S E5,E6
L3 551 S (R19515 OR R01076)/DCN OR 1076/DRN
L4 46 S (TETRAHYDROTHIOPHEN# S OXIDE OR TETRAMETHYLENE SULFOXIDE OR T
L5 26 S (TETRAMETHYLENE SULPHOXIDE OR TETRAMETYLENESULPHOXIDE)/BIX
L6 912 S (SULFOLAN# OR TETRAHYDROTHIOPHENE 1 1 DIOXIDE OR TETRAMETHYLE
L7 1432 S (SULPHOLAN# OR TETRAMETHYLENE SULPHONE OR TETRAMETHYLENESULFO
E METHYLSULFONE/DCN

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                E METHYL SULFONE/DCN
                E ETHYL SULFONE/DCN
                E ETHYLSULFONE/DCN
                E METHYL SULFONE/CN
                E ETHYL SULFONE/CN
                E PROPYL SULFONE/CN
                E PROPYLSULFONE/CN
                E PROPYL SULFOXIDE/DCN
                E PROPYL SULFOXIDE/CN
                E METHYL SEC BUTYL SULFOXIDE/DCN
                E METHYL SEC-BUTYL SULFOXIDE/DCN
                E METHYL SEC-BUTYL SULFOXIDE/CN
L8          13241 S  L1,L3-L7
L9              1 S US20030039992/PN
                E R14680+ALL/DCN
L10            35 S E1
                E R00776+ALL/DCN
                E R07542+ALL/DCN
L11            33 S E1
                E R01414+ALL/DCN
L12           604 S E1 OR 1414/DRN
                E R10815+ALL/DCN
L13             2 S E1
                E THILANE/DCN
                E THIOLANE/DCN
                E R05268+ALL/DCN
L14          1430 S E1
                E R11390+ALL/DCN
L15            56 S E1
                E R01084+ALL/DCN
L16          1171 S E1 OR 1084/DRN
                E R08167+ALL/DCN
L17            28 S E1
                E R04880+ALL/DCN
                E R18618+ALL/DCN
L18            11 S E1
                E R19515+ALL/DCN
L19            20 S E1
                E RA013I/SDCN
L20             1 S E3
                E RA01NW/SDCN
L21             1 S E3
                E RA012P/SDCN
L22             1 S E3
                E RA00NS/SDCN
L23             1 S E3
                E RA4ZYK/SDCN
L24             1 S E3
L25             8 S RA4ZYK/DCN
                E RA00GC/SDCN
L26             1 S E3
                E RA1YH4/SDCN
L27             1 S E3
L28             4 S RA1YH4/DCN
                E 0074-53301/SDCN
L29         15786 S L8,L10-L19,L25,L28
L30            73 S L29 AND C12Q001-68/IPC
L31            93 S L29 AND (RA013I OR RA01N2 OR RA012P OR RA00N2)/DCN
L32             3 S L29 AND (B04-L04A OR C04-L04A)/MC
L33             4 S L29 AND (B04-B02C4 OR C04-B02C4)/MC
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L34          28 S L29 AND (B04-L04# OR C04-L04#)/MC
L35          72 S L29 AND RA00GC/DCN
L36          30 S L29 AND ?POLYMERASE?/BIX
L37         120 S L32-L36
L38          14 S L29 AND D05-A02B/MC
L39         126 S L37,L38
L40          23 S L39 AND (B12-K04 OR C12-K04 OR B12-K04F OR C12-K04F)/MC
L41         110 S L29 AND D05-H12?/MC
L42          35 S L29 AND D05-H18?/MC
L43          24 S L42 AND L39-L41
L44          12 S L32,L35 AND L40
                SEL DN AN 6 10
L45           2 S L44 AND E1-E4
L46          62 S L32,L35 NOT L44
L47         110 S L39-L41 NOT L42-L46
                SEL DN AN 106 L47
L48           1 S L47 AND E5-E6
L49          35 S L29 AND PCR/BIX
                SEL DN AN 29 31
L50           2 S L49 AND E7-E10
L51           4 S L45,L48,L50
                E CHAKRFABARTI/AU
                E CHAKRABARTI/AU
L52          36 S E23,E24
                E SCHUTT/AU
L53          11 S E8-E10
L54          45 S L52,L53
L55           1 S L54 AND L29
L56           3 S L54 AND C12Q/IPC
L57           2 S L54 AND (?POLYMERASE? OR PCR)/BIX
L58           1 S L54 AND (B04-L04A OR C04-L04A)/MC
L59           3 S L55-L58
L60           2 S L59 NOT LEUKAEMIA/TI
L61           5 S L51,L60
L62           5 S L1-L60 AND L61

     FILE 'WPIX' ENTERED AT 11:13:10 ON 26 MAY 2005

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